

## Original Research

# Demographic Characteristics of Patients Applying for Legal Pregnancy Evacuation and the Incidence of Depression in Post-Discharge Patients-Prospective Cross-Sectional Study

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## Abstract

**Background:** Our study aimed to investigate the demographic characteristics of patients who applied for legal curettage and the incidence of depression in patients after the procedure. **Methods:** Our study was carried out in Ortaca/Turkey in 2021–2022. It is a prospective cross-sectional study. Our study was conducted on 35 patients. In our study, the patients' income level, education level, place of residence, family structure, religious belief, and the reason for the legal eviction request were investigated. It was investigated whether the patients were affected in their work, private, social, and sexual life after the procedure. Post-procedure Beck depression inventory (BDI) was applied to the patients and their spouses. The incidence of post-procedure depression was investigated. SPSS Version 28.0.1 program was used for statistical analysis. **Results:** The mean age was  $33.74 \pm 6.85$  years. Reasons for termination of pregnancy: 5 patients for not married, 5 patients because the child's father is unknown, 1 patient due to an extra-marital affair, 4 patients because they have fear of raising and caring for children, 4 patients due to family planning error, 3 patients because they have more than two children, 4 patients because they think they are too old to be mothers, 5 patients due to financial difficulties, 1 patient did not want to be a parent in any way, and 3 patients because they thought it was too early to have children. The mean BDI score of the mothers before the procedure was  $10.1143 \pm 0.637$  and  $19.457 \pm 1.722$  after the procedure. A statistically significant difference was found in the post-procedure BDI scores compared to the pre-procedure ( $p = 0.00$ ). The fathers' pre-procedural BDI score was  $6.28 \pm 1.12$ , the post-procedure BDI score was  $7.25 \pm 1.14$ , and there was no statistically significant difference in pre-and post-procedure BDI scores ( $p = 0.956$ ). The mean BDI score of the mothers was  $19.45 \pm 1.72$ , and the mean BDI score of the fathers was  $7.25 \pm 1.14$ . BDI scores of the mothers were statistically significantly higher than those of the fathers ( $p = 0.00$ ). Moderate depression in 37.1% of mothers and severe depression in 20% were detected. In fathers, 5.7% moderate depression and 2.9% severe depression were found. The frequency of moderate and severe depression in mothers was statistically significant compared to fathers ( $p = 0.00$ ). The work-life of 57.1%, the social life of 45.7%, the private life of 71.4%, and the sexual life of 82.9% of women who had a legal abortion were affected. **Conclusions:** The incidence of depression after legal medical termination of pregnancy is not to be underestimated. Precautions for depression should be taken and followed in these patients.

**Keywords:** legal release; dilatated curettage; depression; curettage

## 1. Introduction

In its simplest definition, abortion means the termination of an unwanted pregnancy by various methods. However, not wanting to be pregnant is itself the subject of ethical, political, and legal debates and practices. In other words, whether or not she wants to bring a child into the world is not seen as a matter that a woman can decide on her own as an individual [1]. Family planning is when couples can have as many children as they want, whenever they want. Couples need to benefit from family planning services adequately. As a result, both unwanted pregnancies and excessive fertility will be prevented, mother-child health and public health will be positively affected, and the effective use of country resources will be realized [1]. Al-

though there have been important developments as a result of the policies implemented in our country for about 30 years, the use of family planning methods has still not reached the desired levels [2–4]. Unwanted pregnancies are an important medical, social, and social health problem [5]. The World Health Organization states that approximately 84 million unintended pregnancies occur each year [6]. An average of 46 million abortions occur each year and 17 thousand women die due to unsafe abortions [7]. The fact that the rate of use of modern contraception methods is not at the desired level in Turkey and the application rates for abortion is still high are seen as an important problem in terms of women's health [8]. Family planning services are provided free of charge by the Ministry of Health



in Turkey. These services are carried out by health personnel trained in family planning centers affiliated with the Ministry of Health. Despite the free provision of these services, the high rates of unwanted pregnancy and legal abortion show that women do not know this issue. In our study, the causes of legal abortion, the demographic characteristics of the patients, and the development of depression were investigated. We aim to make available data a great contribution to family planning services.

Our study aims to learn the reasons for abortion in patients who come for legal abortion and to contribute to family planning and various planning for these reasons. It is also to contribute to the health plans to be made according to the demographic characteristics of the patients. To determine the rate of depression that will develop after curettage in patients and to draw attention to the need for psychiatric support in patients who come for legal curettage. Our study was conducted in Turkey. Our study is a study that examines the Beck depression inventory (BDI) scores of the mothers before and after legal pregnancy discharge and the effects on the social life of the mothers after the legal termination of pregnancy. At the same time, BDI scores of fathers after legal termination of pregnancy were compared with mothers. For these reasons, it is one of the rare studies that will contribute to the literature.

## 2. Materials and Methods

### 2.1 Type of Research

Our study is a prospective cross-sectional study.

### 2.2 Research Location and Time

Our study was carried out in Muğla/Turkey Ortaca Yücelen Hospital, Gynecology, and Obstetrics clinics between Sep 2021 and April 2022.

### 2.3 Population and Sample of the Research

Our study was conducted on patients over the age of 18. Patients who did not have a medical indication for curettage and who wanted legal curettage were included in the study. Patients under the age of 18 were excluded from the study by Turkish laws. Article 6 of Law No. 2827 on Population Planning (NPHK), which came into force in 1983, states that "If people are married, the consent of the spouse is required for sterilization or evacuation of the uterus". Therefore, patients whose consent could not be obtained from one of the spouses of married patients were excluded from the study. The study was designed on 40 patients who applied to our center for legal pregnancy evacuation under 10 weeks between the relevant dates. However, 3 patients did not want to participate in the study. And 2 patients were not included in the study. They could not be reached in any way because they came for a holiday. Patients who had curettage with medical indication were excluded from the study. It was performed on 35 patients who met the working conditions.

### 2.4 Research Design

The study was conducted as a single-center multidisciplinary study. Patients who met the inclusion criteria were included in the study. In the study, the age and obstetric history of the patients were questioned. Income levels of the patients (1) Living on social assistance; (2) Single minimum-wage employee; (3) Two minimum-wage employees; (4) A single employee in a middle-income job; (5) Two employees in a middle-income job; (6) The high-income level was questioned. The middle-income level was taken as twice the minimum wage. Patients were classified as (1) Illiterate; (2) Primary school graduate; (3) Secondary school graduate; (4) High school graduate; (5) University graduates according to education level. The patients were classified as (1) Village; (2) Town; (3) District center; (4) Provincial center according to where they lived. The patients were classified according to their family structure: (1) The nuclear family (Parents and children); (2) Extended family (including grandparents, grandparents). Patients were classified as (1) Non-believer; (2) Having any religious beliefs. Patients were not asked which religion they belonged to avoid ethnic discrimination. The patients were asked about the reasons for the termination of pregnancy. (1) Being single; (2) Not knowing who his father is; (3) Pregnancy as a result of extramarital affair; (4) Fear that the body shape will deteriorate due to pregnancy; (5) Fear of raising and caring for children; (6) Getting pregnant as a result of family planning/conservation method error; (7) Having more than two children; (8) Thinking you're too old to be a mother; (9) Being in financial trouble; (10) Not wanting to have children at all; (11) Thinking it's too early to have children; (12) Thinking that you can't be a mother or father was questioned. In our study, it was questioned whether the patients' work, private, social, and sexual lives were affected after curettage. Beck Depression Inventory (BDI) was administered to the patients and their spouses one day before the procedure. BDI was applied to the patient and their spouses again on the seventh day after the procedure. BDI was administered face-to-face or online. No referral was made to the patients during BDI. We can express the evaluation of the scores as a result of BDI as follows: 0–9: Minimal Depression. 10–16: Mild Depression. 17–29: Moderate Depression. 30–63: Severe Depression. In BDI, the person chooses the option that best describes him/herself. Then, the points given to each item are added up. The lowest score that can be obtained from the scale is 0, and the highest score is 63. The total score; gives the result that it is none-mild, mild-moderate, moderate-severe, or severe. The incidence of depression in the patients was investigated.

### 2.5 Statistical Analysis

While evaluating the findings obtained in the study, IBM SPSS Statistics 28 (PASW Inc, Chicago, IL, USA) program was used for statistical analysis. While evaluat-

**Table 1. Age and pregnancy numbers.**

	Number (n)	Minimum	Maximum	Mean $\pm$ Std
Age (Year)	35	18	43	33.74 $\pm$ 6.85
Total pregnancy	35	1	5	2.742 $\pm$ 1.14
Number of birth	35	0	4	1.45 $\pm$ 1.06
Number of live children	35	0	4	1.42 $\pm$ 1.03
Number of curettages	35	0	4	1.17 $\pm$ 0.61
Number of abortions	35	0	1	0.085 $\pm$ 0.28

ing the study data, the Chi-Square test was used to compare qualitative data as well as descriptive statistical methods (mean, standard deviation, frequency). Significance was evaluated at the  $p < 0.05$  level at the 95% confidence interval.

### 3. Results

The general characteristics of the patients included in the study are given in Table 1. The demographic characteristics and legal abortion requests of the patients included in the study are given in Table 2. While the mean BDI score of the mothers before the legal termination of pregnancy was  $10.1143 \pm 0.637$ , it was  $19.457 \pm 1.722$  after the procedure. It was observed that there was a statistically significant difference in the post-procedure BDI scores of the mothers compared to the pre-procedure ( $p = 0.00$ ) (Table 3). The fathers' pre-procedural BDI score was  $6.28 \pm 1.12$ . The post-procedure BDI score of the fathers was  $7.25 \pm 1.14$ . There was no statistically significant difference in the BDI scores of the fathers before and after the procedure ( $p = 0.956$ ) (Table 3). While the mean BDI score of the mothers was determined as  $19.45 \pm 1.72$ , the mean BDI score of the fathers was determined as  $7.25 \pm 1.14$ . After the legal abortion, the mothers' BDI scores were found to be statistically significantly higher than the father's ( $p = 0.00$ ) (Table 4). 14.3% minimal depression, 28.6% mild depression, 37.1% moderate depression, and 20% severe depression were detected in mothers. 34.3% minimal depression, 28.6% mild depression, 5.7% moderate depression, and 2.9% severe depression were detected in fathers. The incidence of moderate and severe depression in mothers was statistically significant compared to fathers ( $p = 0.00$ ) (Table 5). The spouses of 10 patients were absent. The work-life of 57.1%, the social life of 45.7%, the private life of 71.4%, and the sexual life of 82.9% of women who had a legal abortion were affected. The data are given in Table 6.

### 4. Discussion

Worldwide, approximately 73 million abortions are performed each year, and more than 90% occur in the first trimester [9,10]. While women generally cope with psychological problems related to abortion, some experience psychological problems [11–13]. The Transactional Model, derived from stress and coping theories, for example, can help explain the factors that influence women's responses

to the experience of abortion. According to this model, a woman's psychological experience is shaped by how she evaluates the importance of abortion and her coping skills. Perceived stress arises from situations in which women assess that they exceed their coping abilities or resources. Women's perceptions of stress can influence the choice of certain coping behaviors and subsequently their psychological well-being [14]. In our study, the rate of moderate and severe depression in mothers was determined as 57.1%. In our study, mothers with moderate and severe depression were given psychiatric support. Farnoosh Moafi *et al.* [15] conducted a study on 185 women who had spontaneous abortions between 2015 and 2016. In this study, they found the rate of depression in patients to be 54%. In this study, it was reported that religious belief, gestational age at the time of abortion, and education level contributed to the development of depression [15]. In a different study, the rate of depression was reported as 7.9% after curettage [16]. In a review of 23 studies among American women, factors such as the previous history of mental health problems, gestational age, low self-esteem, low resilience, poor ability to cope with abortion, indecision about the decision to have an abortion, stigma, and low social support were effective in influencing female psychology [12]. In our study, the post-procedural BDI scores of the mothers were significantly higher than before the procedure. In a study conducted on 253 women who requested an abortion in a tertiary hospital in Beijing in 2021, the stress level was found to be 25.3%, and the depression level was 22.5% [17]. CERAN and TAŞDEMİR conducted a study on depression and anxiety in patients who had a legal abortion and were aborted for medical reasons. In the study, moderate-severe depression was found to be statistically higher in the group seeking legal termination of pregnancy than in the medically aborted group (31.4%, 5.7%,  $p < 0.05$ , respectively) [18]. Similarly, moderate-severe anxiety was 34.3% in the group seeking legal termination of pregnancy and 8.6% in the medically-induced abortion group, and a statistical difference was observed ( $p < 0.05$ ) [18]. Jennifer Kerns *et al.* [19] conducted a study involving 80 women. The results of the study revealed that self-judgment during abortion was significantly associated with increased post-abortion grief ( $\beta = 2.5$  and  $p = 0.02$ ) [19]. No statistical relationship was found between self-judgment and post-traumatic stress disorder and/or mental health [19]. There are vari-

**Table 2. Demographic data.**

	Number (n)	Percent (%)	Total
Living place			
Village	5	14.3	35
Town	6	17.1	35
District Center	23	65.7	35
Provincial center	1	2.9	35
Level of education			
Primary school graduate	1	2.9	35
Secondary school graduate	4	11.4	35
High school graduate	14	40	35
Graduated from an University	16	45.7	35
Income rate			
Living on social assistance	1	2.9	35
One minimum wage workers	5	14.3	35
Two minimum wage workers	14	40	35
One middle-income worker	13	37.1	35
Two middle-income workers	2	5.7	35
Family structure			
Nuclear family	28	80	35
Extended family	7	20	35
Religious belief			
Does not believe	3	8.6	35
Believes	32	91.4	35
Reason for requesting legal abortion			
Not to be married	5	14.3	35
Not knowing his father	5	14.3	35
Extramarital affair	1	2.9	35
Fear of pregnancy-related body shape deformation	0	0	35
Fear of raising and caring for children	4	11.4	35
Getting pregnant as a result of family planning/conservation method error	4	11.4	35
Having more than two children	3	8.6	35
Thinking you're too old to be a mother	4	11.4	35
Be in economic distress	5	14.3	35
Not wanting to have children at all	one	2.9	35
Thinking it's too early to have children	3	8.6	35
Thinking that you can't be a mother or father	0	0	35

**Table 3. Beck depression inventory scores before and after the procedure.**

	Mean $\pm$ Std	Total number of patients (n)	<i>p</i>
Mothers before the procedure	10.1143 $\pm$ 0.637	35	0.00*
Mothers post-procedure	19.457 $\pm$ 1.722	35	
Fathers before the procedure	6.28 $\pm$ 1.12	25	0.956
Fathers post-procedure	7.25 $\pm$ 1.14	25	

\*Student's *t*-test 95% Confidence Interval *p* < 0.05 value was considered significant.

**Table 4. Mother and father Beck depression inventory scores.**

	Mean $\pm$ Std	Total number of patients (n)	<i>p</i>
Mom	19.45 $\pm$ 1.72	35	0.00*
Father	7.25 $\pm$ 1.14	25	

\* Student's *t*-test 95% Confidence Interval *p* < 0.05 value was considered significant.

\* 10 patients do not have a partner.

ous studies on abortions in the literature. Zahra Tavoli *et al.* [20] showed that women with recurrent miscarriages reported intense functional disability and lower well-being compared to women who did not have recurrent miscarriages. The results of our study are compatible with the existing literature. In our study, it was found that women's private and sexual lives were significantly affected after the legal termination of pregnancy. Our study is a study that will contribute to the literature in terms of evaluating work, social, private, and sexual life. Again, in our study, fathers'

**Table 5. Results of mother and father Beck depression inventory.**

	Minimal depression		Mild depression		Moderate depression		Severe depression		Total		<i>p</i>
	N	%	N	%	N	%	N	%	N	%	
Mom	5	14.3	10	28.6	13	37.1	7	20	35	100	0.00*
Father	12	34.3	10	28.6	2	5.7	one	2.9	25	100	

\* Pearson Chi-Square 95% Confidence Interval  $p < 0.05$  value was considered significant.

10 patients do not have a partner.

N, Number; %, Percent.

**Table 6. Affected status in normal life in women after curettage.**

	Number (N)	Percent (%)	Total number (n)	Total percentage (%)
Business life				
Affected	20	57.1	35	100
Not Affected	15	42.9	35	100
Social life				
Affected	16	45.7	35	100
Not affected	19	54.3	35	100
Private life				
Affected	25	71.4	35	100
Not affected	10	28.6	35	100
Sexual life				
Affected	29	82.9	35	100
Not affected	6	17.1	35	100

BDI scores were examined and they were found to be lower than mothers. It is thought that this finding will contribute to the existing literature. Hajnasiri *et al.* [21] In a study they conducted, found that the rates of depression increased after curettage. As a result of this study, they stated that post-abortion counseling can reduce the amount of depression and anxiety, and the necessary consultations in follow-up can be effective in improving women's health [21]. In a study by Sheila Faure and Helene Loxton [22], they reported that high anxiety and moderate depression were observed before abortion and gradually decreased within three weeks. Richa Sharma *et al.* [23] conducted a study on 196 patients in India. As a result of this study, they showed that the rate of depression before curettage was 6.1% and increased to 10.7% 1 month after curettage. They stated that after abortion, interpersonal, spouse, and mother-child relationships were greatly affected [23]. In our study, depression rates were found to be high in mothers after abortion. Again, BDI scores are significantly higher after curettage compared to the time of the first admission. These findings show that depression after abortion is at a substantial level in mothers. Existing literature supports our findings. Again, the BDI scores of the fathers ( $7.257 \pm 1.146$ ) were significantly lower than the mothers ( $19.457 \pm 1.722$ ). We hope that this result will contribute to the literature. Again, the rates of impact on work, social, private, and sexual health after the procedure are at a considerable level. Even if it is voluntary, termination of pregnancy is a traumatic situation for mothers. Necessary information

and psychiatric support are important for mothers at every stage.

## 5. Limitations of the Study

Our study is a single-center multidisciplinary study. Although it has the advantage of being a prospective study, the number of patients is small. There is a need for multi-center, multidisciplinary studies with more patients in this regard.

## 6. Conclusions

In our study, it was observed that there were various reasons for voluntary legal termination of pregnancy. The three most common reasons are not being married, not knowing the father of the child, and being in economic distress. The second most common reasons are fear of raising and caring for a child, getting pregnant as a result of family planning mistakes, and thinking that she is too old to be a mother. Other reasons are having more than two children, thinking that it is too early to have a child, pregnancy as a result of extramarital affairs, and not wanting a child in any way. BDI scores increased significantly after legal termination of pregnancy compared to the time of the first admission in mothers. The rate of moderate and severe depression after legal termination of pregnancy in mothers is 57.1%. In our study, mothers with moderate and severe depression were given psychiatric support. Post-procedure mothers are at high risk of depression and medical attention is needed. Compared to mothers, fathers have lower depres-



sion scores. Mothers are more affected by legal termination of pregnancy from a psychological point of view. Consideration should be given to providing psychiatric support to mothers.

## Availability of Data and Materials

Datasets are available from the corresponding author on reasonable request after permission from the local authorities.

## Author Contributions

Extraction and drafting of the manuscript—İK, BB, AY, HY; Analysis of data, manuscript revision—HY, İK; Design and revision—İK, HY; Statistical analysis—İK, BB, AY, HY. All authors read and approved the final manuscript.

## Ethics Approval and Consent to Participate

The study was approved by the ethics committee of the University Faculty of Medicine with Protocol No: 220028 and Decision No: 28. The study was conducted by the Declaration of Helsinki. Informed consent was obtained from the patients included in the study.

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## Conflict of Interest

The authors declare no conflict of interest.

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