







ORIGINAL ARTICLE

The Relationship of Pregnancy Planning Status with Perception of Risk and Anxiety During Pregnancy: A Cross-Sectional Study

Gebeliğin Planlı Olma Durumunun Gebelikte Risk Algısı ve Anksiyete ile İlişkisi: Kesitsel Bir Çalışma

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ABSTRACT

Aims: The objective of this study was to determine the relationship of pregnancy planning status with perception of risk and anxiety during pregnancy.

Material and Methods: The sample for the cross-sectional study formed from 268 pregnant women applied to a hospital in eastern Turkey between April 1 and April 20, 2022. The data were obtained using the "Personal Information Form," the "London Measure of Unplanned Pregnancy (LMUP)," the "Perception of Pregnancy Risk Scale (PPRS)," and the "Pregnancy-Related Anxiety Scale-Revision-2 (PRAS-R2)." In statistical analysis, the percentage distribution, arithmetic mean, standard deviation, Cronbach's alpha, t test in independent groups, and Pearson correlation analysis were utilized.

Results: The proportion of women who planned to have a baby was found to be 77.2%. The mean total PPRS and PRAS-R2 scores of the women with planned pregnancies were 30.21±16.63 and 27.79±7.72, respectively, and the difference between the groups was determined to be significant (p=0.000). The mean total PPRS and PRAS-R2 scores of the women who had an unplanned pregnancy were 40.71±11.80 and 32.49±5.59, respectively, and the difference between the groups was determined to be significant (p=0.000). According to the correlation analysis, there was a weakly significant positive correlation between the mean total scores of women with planned and unplanned pregnancies on the GRAS and GAS-R2, and as the level of perceived risk of pregnancy increased, so did the level of pregnancy-related anxiety.

Conclusion: It was found that women with unplanned pregnancies had a higher degree of risk perception and anxiety during pregnancy, and that the level of pregnancy-related anxiety rose as the level of risk perception increased.

Keywords: Anxiety, Pregnancy, Planned pregnancy, Unplanned pregnancy, Perception of risk.

ÖZ

Amaç: Bu çalışmada, gebeliğin planlı olma durumunun gebelikte risk algısı ve anksiyete ile ilişkisini belirlemek amaçlanmıştır.

Gereç ve Yöntemler: Kesitsel nitelikte yapılan çalışmanın örneklemini Türkiye'nin doğusunda bulunan bir hastaneye 1-20 Nisan 2022 tarihleri arasında başvuran 268 gebe oluşturmıştır. Veriler, "Kişisel Tanıtım Formu", "Londra Planlı Gebeliği Belirleme Ölçeği (LPGBO)", "Gebelikte Risk Algısı Ölçeği (GRAÖ)" ve "Gebelikte İlişkili Anksiyete Ölçeği-Revizyon-2 (GAÖ-R2)" ile toplanmıştır. İstatistiksel değerlendirmede; yüzdelik dağılım, aritmetik ortalama, standart sapma, Cronbach's alfa, bağımsız gruplarda t testi ve Pearson korelasyon analizi kullanılmıştır.

Bulgular: Planlı gebelik yaşayan kadınların oranı %77.2 olarak saptandı. Planlı gebelik yaşayan kadınların GRAÖ ve GAÖ-R2 toplam puan ortalamalarının sırasıyla 30.21±16.63, 27.79±7.72 olduğu ve gruplar arasındaki farkın anlamlı olduğu belirlendi (p=0.000). Plansız gebelik yaşayan kadınların GRAÖ ve GAÖ-R2 toplam puan ortalamalarının sırasıyla 40.71±11.80, 32.49±5.59 olduğu ve gruplar arasındaki farkın anlamlı olduğu saptandı (p=0.000). Yapılan korelasyon analizi sonucunda planlı ve plansız gebelik yaşayan kadınların GRAÖ ve GAÖ-R2'nden aldıkları toplam puan ortalamaları arasında pozitif yönde zayıf düzeyde anlamlı ilişki olduğu ve gebeliğin riskli algılanma düzeyi arttıkça gebelikte ilişkili anksiyete düzeyinin de arttığı belirlendi.

Sonuç: Gebelikteki risk algısı ve anksiyete düzeyinin plansız gebelik yaşayan kadınlarda daha yüksek olduğu ve gebeliğin riskli algılanma düzeyi arttıkça gebelikte ilişkili anksiyete düzeyinin de arttığı belirlendi.

Anahtar Sözcükler: Anksiyete, Gebe, Planlı gebelik, Plansız gebelik, Risk algısı

Introduction

A planned pregnancy is a personal decision made by women and couples to choose their own pregnancy aims and timing. It also involves assumptions about what it means to be prepared to have a baby (1). Planned pregnancy is a complicated circumstance that involves not only components of desire and purpose, but also contraceptive behavior and proper personal situations in marriage (1, 2). Having children has always been seen as one of the primary goals of

marriage (3). The idea of "no marriage without children" in Turkish culture favorably influences the attitude toward planned pregnancy and parenting in our nation. Indeed, whereas the planned pregnancy rate was 68% in 2013, it jumped to 75% in 2018 according to TNSA 2013 data (4,5). According to the research review, age, marital relationships, living with a partner, having had a prior pregnancy, and having experienced abortion or miscarriage were all positively connected

to pregnancy planning (6).

In addition to emotions of delight and excitement, pregnant moms begin to face the bodily load of pregnancy, anxiety, and a strong sense of responsibility (7). In addition to these scenarios, it has been found that the frequency of feeling bad mood rises with the influence of rising progesterone hormone (8). Although pregnancy has a beneficial impact on women's lives, it is a time when women confront several hazards in the prenatal and intranatal processes. The attitude of danger among pregnant women towards themselves originates precisely here (9). The idea of risk perception in pregnant women is unique and subjective (10). The idea of risk comprises perceptions about the probability of damage to the mother or infant, as well as the severity of the risk scenario. In addition to the cognitive capacity to comprehend a personal danger scenario, the physical state of pregnancy is critical. The perception of danger in pregnancy impacts the woman's mental state and is effective in decision making in all pregnancy and delivery settings (11). Situations such as caesarean section, the fear of dying during pregnancy, preterm birth, congenital problems in the infant or the need to be hospitalized in the neonatal intensive care unit, and worries regarding the site of birth may all be considered as perceived risks during pregnancy (12). All of these perceived concerns might induce anxiety and concern in pregnant mothers.

Anxiety is a troubling sensation of concern and dread that each human feels from time to time in different stages of life, and it is often accompanied by bodily symptoms that are dangerous or regarded as threatening to life (13). Anxiety during pregnancy has been demonstrated to be a greater and frequently more constant predictor of infant-related illnesses and/or delivery than general psychological distress (14). Anxiety in pregnancy may emerge in a variety of ways and be connected with a variety of anxiety disorders as well as pregnancy-specific anxieties and concerns (15). Pregnancy anxiety refers to pregnancy-specific anxieties or anguish, such as the health of the growing baby, changes in the woman's personal appearance, loss of labor force, and parental issues in future periods with delivery (14, 16, 18). According to this viewpoint, evaluating the anxiety experienced/might be encountered during pregnancy and offering support systems by healthcare experts would help women to live a more pleasant life throughout pregnancy and post-pregnancy processes.

The fact that planned pregnancies may secure the long-term well-being of mothers and their newborns by increasing the capacity to manage perceived risk and anxiety issues will also promote the successful completion of the complete pregnancy process. The purpose of this study was to evaluate the connection between pregnancy planning status and perceived risk and anxiety throughout pregnancy.

Material And Method

The purpose of this cross-sectional research was to examine the connection between pregnancy planning status and perceptions of risk and anxiety throughout pregnancy. The research was carried out at an eastern Turkish hospital between April 1 and April 20, 2022. Pregnant women who applied to the hospital where the research was performed made up the study's population. All pregnant women who applied to the hospital on the study day, agreed to participate in the research, had no communication difficulties, and had no psychiatric disorders were included in the study. While calculating the sample of the study, G*Power 3.1.9.2 program was used and the study "Anxiety during the pregnancy and affecting factors: a cross-sectional study" was taken as reference (19). Accordingly, Effect size (Cohen's D) was taken as 0.730 and it was determined that a total of at least 10 pregnancies should be reached, at least 50 planned and 50 unplanned, with a 95% confidence interval and 95% power. The study was completed with 268 pregnant women (planned pregnant:207 ; unplanned pregnant:61) who met the inclusion criteria.

Data Collection Tools

The information was gathered using the "Personal Information Form," the "London Measure of Unplanned Pregnancy (LMUP)," the "Perception of Pregnancy Risk Scale (PPRS)," and the "Pregnancy-Related Anxiety Scale-Revision-2 (PRAS-R2)."

Personal Introduction Form

There are a total of 18 questions in the personal introduction form prepared by the researchers in accordance with the literature, including 11 questions about socio-demographic characteristics of pregnant women (age, educational status, employment status, economic status, etc.) and 7 questions about obstetric characteristics (gestational week, baby gender, low curettage status, etc.) (20-23).

London Measure of Unplanned Pregnancy Measure (LMUP)

Barrett et al. (22) created the London Measure of Unplanned Pregnancy (LMUP), which is a psychometric assessment of unplanned pregnancy. Altıparmak et al. (21) assessed its Turkish validity and reliability. The scale consists of 5 items. 0-3 points can be divided into 3 groups as unplanned, 4-7 points as undecided, 8 and above points as planned pregnancy or ≤ 7 can be divided into two groups as unplanned and ≥ 8 as planned pregnancy. The scale's Cronbach Alpha reliability coefficient was determined to be 0.90. Cronbach Alpha reliability coefficient was reported to be 0.86 in this study.

Perception of Pregnancy Risk Scale (PPRS)

Heaman and Gupton created a 9-item measure to assess pregnant women's perceptions of risk (23). Evçili et al. performed a Turkish validity and reliability research on the scale, which is a visual analogue type assessment instrument. It is divided into two subdimensions: "pregnant woman's risk perception towards the baby" and "pregnant woman's risk perception towards herself."

- The sub-dimension "perception of risk of the pregnant woman towards the baby" consists of 5 questions, numbered 2, 6, 7, 8, and 9.

- The "perception of risk of the pregnant woman towards herself" sub-dimension is made up of four items, which are numbered 1, 3, 4, and 5.

Under each item on the scale, there is a 0-100 mm linear line with the expressions "no risk at all" and "extremely high risk" used to answer the questions. The scale's total score is computed by adding the scores for each of the nine components and dividing the total score by 9. A score for the scale's sub-dimensions is calculated by summing the scores of the appropriate sub-dimensions and dividing the result by the number of items. The measure has no cut-off point, and a rise in the scale's score is interpreted as an increase in the pregnant woman's sense of danger associated to herself and her baby. The scale's Cronbach Alpha reliability coefficient was calculated to be 0.84 (8). The Cronbach Alpha reliability coefficient was determined to be 0.86 in this investigation.

Pregnancy-Related Anxiety Scale-Revision 2 (PRAS-R2)

Van den Bergh created the Pregnancy-Related Anxiety Scale in 1990. Aksoy Derya et al. performed

the Turkish validity and reliability research of the scale, which was amended by Huizink et al. in 2016 so that it may be responded by all pregnant women regardless of parity (24-26). The scale includes 11 items and three sub-dimensions, including "fear of childbirth (items 1, 2, 6, and 8)," "fear of having a disabled child (items 4, 9, 10, and 11)," and "concerns about physical appearance (items 3, 5, and 7)." The scale's eighth item is for women who have never given birth previously and does not apply to multiparous women. Items on the 5-point Likert-type scale are scored between 1 and 5, with primiparous women scoring 11-55 and multiparous women scoring 10-50. All of the items on the scale are positive, and the higher the score, the more anxiety during pregnancy is tolerated. There is no cut-off point on the scale. The scale's Cronbach Alpha reliability value was 0.94 for the primiparous group and 0.93 for the multiparous group (26). Cronbach Alpha reliability coefficient was determined to be 0.83 in this study.

Data Collection

The researcher collected study data from pregnant women who applied to a hospital in eastern Turkey through face-to-face interviews. Data gathering takes around 15-20 minutes on average.

Data Evaluation

The data was coded and analyzed in a computer setting using the SPSS 20.0 package application. In statistical analysis, the percentage distribution, arithmetic mean, standard deviation, and t test in separate groups were utilized. The data were analyzed at the 95% confidence interval and at the $p < 0.05$ level of significance.

Ethical Considerations in Research

The appropriate local ethics committee (Decision No: 2022/3295) and the management of the institution where the research was performed provided written consent. Before beginning the trial, all pregnant women completed an informed consent form. While gathering study data, the Declaration of Helsinki was followed.

Results

Table 1 shows the comparison of women with planned and unplanned pregnancies according to their demographic characteristics. Among the groups, age, gestational period, spouse's education status, place of residence, family type, relationship status with

Table 1. Distribution of descriptive characteristics of pregnant women (n=268)

Descriptive Characteristics	Planned Pregnancy (n=207)		Unplanned Pregnancy (n=61)		Test and p value
	Mean±SD (min-max)		Mean±SD (min-max)		
Age (years)	28.03±4.40 (19-41)		29.59±5.73 (18-42)		t=43.219 p=0.009
Spouse Age (years)	31.85±5.11 (19-45)		33.68±6.72 (22-55)		$\chi^2=51.407$ p=0.003*
Gestation Period (weeks)	31.72±9.04 (4-41)		33.34±8.39 (5-41)		$\chi^2=24.157$ p=0.934
	n	%	n	%	
Employment Status					
Working	60	29.0	10	16.4	$\chi^2=3.871$ p=0.049**
Not working	147	71.0	51	83.6	
Education Status					
Primary school graduate	15	7.7	15	24.6	$\chi^2=19.687$ p=0.001*
Secondary school graduate	30	14.5	12	19.7	
High school graduate	61	29.5	20	32.8	
University and above	100	48.3	14	23.0	
Spouse Employment Status					
Working	200	96.6	56	91.8	$\chi^2=2.554$ p=0.110
Not working	7	3.4	5	8.2	
Spouse Education Status					
Primary school graduate	8	3.9	9	14.7	$\chi^2=15.679$ p=0.003*
Secondary school graduate	32	15.4	12	19.7	
High school graduate	64	30.9	22	36.1	
University and above	103	49.8	18	29.5	
Place of Residence					
Province	143	69.1	36	59.0	$\chi^2=2.864$ p=0.239
District	46	22.2	20	32.8	
Village	18	8.7	5	8.2	
Income Status					
Income more than expenditure	34	16.4	5	8.2	$\chi^2=13.474$ p=0.001*
Income equals expenditure	139	67.2	33	54.1	
Income less than expenditure	34	16.4	23	37.7	
Family Type					
Nuclear family	177	85.5	53	86.9	$\chi^2=0.074$ p=0.786
Extended family	30	14.5	8	13.1	
Spouse Relationship Status					
Positive	200	93.2	53	86.9	$\chi^2=18.476$ p=0.001*
Neither Positive nor Negative	14	6.8	5	8.2	
Negative	-	-	3	4.9	
Family/Environmental Relationship Status					
Positive	199	96.2	54	88.8	$\chi^2=7.199$ p=0.066
Neither Positive nor Negative	8	3.8	6	9.6	
Negative	-	-	1	1.6	

Number of Pregnancy					
Primiparous	106	51.2	17	27.9	$\chi^2=10.335$ $p=0.001^*$
Multipara	101	48.8	44	72.1	
Pregnancy Type					
Healthy Pregnancy	187	90.3	51	83.6	$\chi^2=2.148$ $p=0.143$
Risky Pregnancy	20	9.7	10	16.4	
Baby Gender					
Girl	97	46.9	32	52.5	$\chi^2=1.138$ $p=0.566$
Male	88	52.5	25	41.0	
I don't know	22	10.6	4	6.5	
Low Living Status					
Yes	36	17.4	12	19.7	$\chi^2=0.047$ $p=0.828$
No	171	82.6	49	80.3	
Experience of Abortion					
Yes	25	12.1	8	13.1	$\chi^2=0.167$ $p=0.683$
No	182	87.9	53	86.9	
Stillbirth Status					
Yes	6	2.9	3	4.9	$\chi^2=0.592$ $p=0.442$
No	201	97.1	58	95.1	

SD:Standard Deviation

* $p<0.001$ ** $p<0.05$

t:Independent Sample T Test

 χ^2 :Chi-Square Test

family/environment, pregnancy type, baby gender, low living status, experience of abortion and stillbirth status was homogeneous ($p > 0.05$, Table 1), and the groups were similar in terms of some demographic characteristics. It was determined that there was a significant difference between the groups in terms of employment status, spouse age, spouse employment status, income level, relationship with spouse, and number of pregnancies in favor of unplanned pregnancy.

Table 2. Women's status of experiencing unplanned pregnancy according to London Measure of Unplanned Pregnancy cut-off score (n=268)

London Measure of Unplanned Pregnancy	Cut-off score	n	%
Unplanned Pregnancy	≤ 7	61	22.8
Planned Pregnancy	≥ 8	207	77.2

The unplanned pregnancy status of women according to the cut-off score of the London scale for determining unplanned pregnancy is given in Table 2. The proportion of pregnant women who had an unplanned pregnancy with a score of 7 points or less was 22.8%, while the proportion of pregnant women who had a planned pregnancy with a score of 8 points or more was 77.2%.

The distribution of the lowest-highest scores that can be obtained by pregnant women on the PPRS and

PRAS-R2 and the distribution of the lowest-highest scores obtained by the pregnant women who participated in the study are given in Table 3. The lowest and highest scores of women with planned pregnancies obtained from PPRS were found to be 10.00-88.89, and the lowest and highest scores of women with unplanned pregnancies for PPRS were found to be 20.00-83.33. In addition, the lowest and highest scores of women with planned pregnancies obtained from PRAS-R2 were determined to be 11-55, and the lowest and highest scores of women with unplanned pregnancies for PRAS-R2 were found to be 24-49.

The comparison of the mean total scores of the women according to the planning status of their pregnancies from the subscales of PPRS and PRAS-R2 is given in Table 4 3. It was determined that the mean total score of Perception of risk in Pregnancy Scale was 30.21 ± 16.63 and the mean total score of Pregnancy-Related Anxiety Scale was 27.79 ± 7.72 and the difference between the groups was significant ($p=0.000$). The mean total score of Perception of risk in Pregnancy Scale was 40.71 ± 11.80 , the mean total score of Pregnancy-Related Anxiety Scale was 32.49 ± 5.59 and the difference between the groups was determined to be significant ($p=0.000$). As a result of the statistical evaluation, it was found that the mean total scores of the Perception of Pregnancy Risk Scale and Pregnancy-Related Anxiety Scale were

Table 3. Comparison of the mean total scores of women according to their pregnancy planning status on the subscales of PPRS and PRAS-R2 (n=268)

Scales	Planned Pregnancy (n=207)	Unplanned Pregnancy (n=61)	Test* and p value	
	Mean±SD 10.00-88.89 (min-max)	Mean±SD 20.00-83.33 (min-max)	T	p
PPRS	30.21±16.63 10.00-88.89 (min-max)	40.71±11.80 20.00-83.33 (min-max)	4.597	0.000
Perception of Risk of The Pregnant Woman Towards The Baby	15.07±10.16	13.35±9.25	-1.185	0.277
Perception of Risk of The Pregnant Woman Towards Herself	14.55±7.92	15.24±8.41	0.588	0.503
PRAS-R2	27.79±7.72 11-55 (min-max)	32.49±5.59 24-49 (min-max)	4.414	0.000
Fear of Childbirth	13.72±3.67	15.71±2.82	2.697	0.078
Fear of Having A Disabled Child	10.52±3.88	12.90±3.31	4.341	0.248
Concerns About Physical Appearances	7.53±3.06	8.67±2.52	2.644	0.051

*Independent samples t test SD:Standard Deviation

PPR Perception of Pregnancy Risk GPA-R2: Pregnancy-Related Anxiety Scale-Revision-2

statistically higher in women who had unplanned pregnancies ($p<0.05$).

Discussion

The outcomes of the research done to assess the association of pregnancy planning status with perception of risk and anxiety during pregnancy are addressed in this part along with related literature.

It was observed that the majority (77.2%) of the women participating in the research had planned pregnancies. This scenario might be attributed to the fact that family planning (FP) techniques are well understood and widely practiced. When the TNSA 2018 data is analyzed, it is seen that 75% of the pregnancies of women who gave birth were desired-planned pregnancies, and our conclusion represents the culture in which the survey was performed. In the same research, it was determined that family planning techniques were widely understood, and 70% of women utilized any FP method (4). Although it is seen that the planned pregnancy rates of women in the eastern region of Turkey (66.1%), where the study was conducted, are similar to our study, the reason why the pregnancies of women living in this region are planned is; It is thought to be related to the values placed on having children (4). Having a child in the Eastern Anatolia Region, where the traditional family structure is dominant; It is

seen as important for a woman to feel valuable and to position herself in an important place in the family (27, 28). Based on this fact, it can be concluded that most women's voluntary pregnancy is connected to the widespread use of family planning techniques. Indeed, when the literature is examined, according to the TNSA (2018) data, it was determined that the vast majority of women living in the east and in rural areas are knowledgeable about family planning methods and the majority of them use any FP method (4, 29). When the studies were analyzed, it was found that the majority of the women had planned pregnancies, and the relevant literature was consistent with the findings of this study (1, 8, 18, 20, 27-39 30-40). When the reasons for this situation are examined, it can be concluded that the FP methods are well known and frequently used in today's society, the educational level of women has increased (48.3% in this study were university and above), the status of women in society has increased and, in addition to entering the working life, life in the city has increased, and the trainings given by midwives and other health professionals in the pre-pregnancy period have increased (4, 28, 40 30, 41). In addition, the analysis conducted within the scope of this study found that an increase in the number of pregnancies was more significant in favor of women who had unplanned pregnancies. When the literature

was examined, it was determined that this finding was consistent, and that low education level, not working in any job, low income level and an increase in the number of pregnancies brought about unplanned pregnancies (42-44).

The mean total score of the GRAS of women with planned pregnancy was 30.21 ± 16.63 , while the mean total score of women with unplanned pregnancy was 40.71 ± 11.80 , and the perception of risk of women with unplanned pregnancy was shown to be greater than that of women with planned pregnancy. However, no research assessing the connection of pregnancy planning status with risk perception was found in the literature. According to the findings of Şahin et al. (2022), the majority of pregnant women planned their pregnancy, and the mean total score of the pregnant women was 42.6 ± 29.38 . However, the association between pregnancy planning status and perception of risk throughout pregnancy was not investigated in this study (37-38).

In this study, the mean total GAS-R2 score of women with planned pregnancy was 27.79 ± 7.72 , whereas the mean total GAS-R2 score of women with unplanned pregnancy was 32.49 ± 5.59 . According to these findings, women who had unexpected pregnancies reported greater levels of anxiety than those who had planned pregnancies. While the pregnancy process is stressful for women even when it is planned, the shock and uncertainty that comes with an unforeseen pregnancy enhances the woman's anxiety (33, 41, 42, 34, 45, 46). When the literature was examined, it was found that there was a positive relationship between unplanned pregnancy and anxiety, as in our study, and that women's unplanned pregnancy increased their anxiety (1, 43-49, 48-54). This data might be interpreted as women seeing unexpected pregnancies as a risk factor in pregnancy, increasing their level of anxiety.

Limitations

The limitation of the study is that the participants were recruited from pregnant women in a public hospital in Turkey. Since it was conducted in a single center, the results of the research cannot be generalized to the whole population.

Conclusions And Recommendations

This study found that women who had an unplanned pregnancy had greater levels of risk perception and anxiety throughout pregnancy than women who had a planned pregnancy. Based on these findings, it is

advised that prenatal care begin with the planning stage, that the pregnancy continue in a healthy manner, and that the delivery go off without a hitch. Midwives and other health providers should emphasize that planned pregnancy and support from husband, family, and friends throughout pregnancy will assist women's adaptation to pregnancy and positive perspective of pregnancy. Midwives should give pre-pregnancy training to help reduce unplanned pregnancies. Women and partners should be advised that unexpected pregnancies might harm mother-child health, and couples should be educated on family planning.

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Author(s) contribution(s)

Conception: SA, YAD; Design: SA, YAD; Supervision: SA, YAD; Data Collection and/or Processing: ET, NMK, KA, ŞKB; Analysis- Interpretation: SA; Literature Review: ET, NMK, KA, ŞKB; Writing: SA, ET, NMK, KA, ŞKB; Critical Review: SA, YAD.

Conflict of interest

The authors have no conflicts of interest to disclose.

Ethical approval

Prior to the study, written permission was obtained from the institutions in which the study was conducted, and ethical approval was obtained from the Scientific Research and Publication Ethics Committee of the Malatya İnönü University of Health Sciences in Turkey on (No.2022/3295).

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