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Does Fear of Coronavirus Affect Cyberchondria in Pregnant Women?

Gebelerde Koronavirüs Korkusu Siberkondriyayı Etkiler Mi?

This study was presented as an oral presentation at III. International Covid-19 And Current Issues Congress on June 19-20, 2021.

Burcu DEMİR GÖKMEN[1*], Volkan GÖKMEN[2], Yılmaz SARIBOĞA[3]

[1] Agri Ibrahim Çeçen University, Faculty of Health Sciences, Department of Nursing, Agri, Turkey.
[2] Istanbul-Cerrahpaşa University, Surgical Diseases Nursing, Istanbul, Turkey.
[3] HSU Van Training and Research Hospital, Gynecology Clinic, Van, Turkey.

Abstract

This study aimed to determine the relationship between fear of COVID-19 and cyberchondria in pregnant women (n=197). This study was conducted between April-May 2021. Research data were collected using the Fear of COVID-19 Scale and the Cyberchondria Severity Scale. It was determined that there was a significant difference between the income status of the pregnant women and the fear of Covid-19 and between the state of being allergic and cyberchondria ($p < 0.05$). A positive and significant correlation was found between the total Fear of COVID-19 Scale score of the pregnant women, their total Cyberchondria Severity Scale score and the compulsion, distress, and excessiveness subscale scores ($p<0.05$). This study is important in that it shows that pregnant women's health-related information seeking behaviors increase their anxiety and fears. To reduce the fear in pregnant women, it is recommended that information about the coronavirus be given by the healthcare team members who follow the pregnant women.

Keywords: Coronavirus, cyberchondria, fear, pregnant

Özet

Bu araştırma gebelerdeki kovid-19 korkusu ile siberkondriya arasındaki ilişkiyi belirlemek amacıyla yapılmıştır. Araştırma tanımlayıcı ve kesitsel desende tasarlanıp, Nisan-Mayıs 2021 tarihleri arasında Türkiyenin doğusunda bir devlet hastanesinin Kadın doğum polikliniğine başvuran 197 gebenin katılımıyla yapılmıştır. Gebelerin gelir durumu ile Covid-19 korkusu arasında, alerjik olma durumları ile siberkondri arasında anlamlı bir fark olduğu belirlenmiştir ($p<0.05$). Gebelerde koronavirüs korkusu ölçeği toplam puanı ile siberkondri ciddiyet ölçeği toplam puanı, zorlantı, aşırı kaygı ve aşırılık alt boyut puanları arasında pozitif yönde anlamlı bir ilişki olduğu bulunmuştur ($p<0.05$). Bu araştırma, gebelerin internette sağlıkla ilgili bilgi arama davranışlarının kaygı ve korkularını arttırdığını göstermesi açısından önemlidir. Gebelerdeki korkuyu azaltmak için gebeleri takip eden sağlık ekibi elemanları tarafından Covid-19 ile ilgili bilgilendirmelerin verilmesi ve güvenilir internet kaynaklarının önerilmesi gerektiği konusunda uygulamaya katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: Gebe, korku, koronavirüs, siberkondriya

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**Sorumlu yazar: burcudmr04@gmail.com*

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1. Introduction

Pregnancy, one of the most important periods of women's lives, is a stressful and difficult process. Today's society, and the digital era of which it is a part, has shaped new lifestyles that can also change rapidly with the effect of new diseases and epidemics. How pregnant women adapt to these new ways of life and how they are affected are important issues (Saccone et al., 2020). Studies have been conducted on the effect of the COVID-19 pandemic on pregnant, fetal, and newborn health; however, these current studies are quite limited (Yücel and Koç, 2020). Changes in routine life during the pandemic, social isolation, being COVID-19-infected, the safety of infants, contradictory and sensational news about the subject in the news media, and distrust in health authorities can lead to anxiety and fear across all of society, especially in at-risk groups (Mızrak-Sahin and Kabakci, 2020; Nanjundaswamy et al., 2020; Kumar and Somani, 2020; Demir and Kilic, 2020; Dagklis et al., 2020; Machado et al., 2021). Although pregnant women's sensitivity to the COVID-19 disease is no different from others in society, they are among the at-risk groups in terms of viral infections (PROG, 2020; Akpınar and Ustun, 2020). In previous studies, it has been stated that lack of knowledge about COVID-19, fear of sickness, and fear of infecting the infant made pregnant women anxious (Li et al., 2020; Mizrak-Sahin and Kabakci, 2020; Preis et al., 2020). It was also noted that the increased fear of COVID-19 caused mental illnesses such as depression and sleep disorders in pregnant women (Li et al., 2020; Machado et al., 2021; Durmus et al., 2021). With the advancement of technology in recent years, people today seek answers to their health-related problems on the internet. The accuracy of this information obtained online has been previously discussed (Beydag and Guldur, 2019; Gunes-Ozturk et al., 2020). It is inevitable that pregnant women will use the internet as an easily accessible source of information to address their current concerns. Much important information about the severity and symptoms of diseases can be obtained through health websites. However, low-quality and unreliable internet sources have the potential to increase anxiety in pregnant women and may negatively affect mental health (Baker and Yang, 2018; Gunes-Ozturk et al., 2020; Durankus and Aksu, 2021; García-Fernández et al., 2021). As a result of repeatedly searching for information about health concerns on the internet, health concerns are not eliminated but rather increased, a process which has been defined as "cyberchondria" (Starcevic and Berle, 2013; Erdogan and Hocaoglu, 2020). In this situation, the focus moves from mild symptoms to serious diseases. Using the internet to find information that will relieve their concerns about the COVID-19 pandemic may affect the health of pregnant women and their babies. This research was thus conducted to seek an answer to the question: "Does fear of COVID-19 affect cyberchondria in pregnant women?"

2. Method

2.1. Aim of study

This study aimed to determine the relationship between fear of COVID-19 and cyberchondria in pregnant women.

This study aimed to determine whether fear of COVID-19 affects cyberchondria in pregnant women.

*Sorumlu yazar: burcudmr04@gmail.com

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2.2. Research Questions

Does fear of COVID-19 affect cyberchondria in pregnant women?

2.3. Population and sample of the research

The research was planned as a cross-sectional and descriptive study. The study was carried out between 15 April 2021 and 15 May 2021 in a Training and Research Hospital in Van, a province located in eastern Turkey. From 413 pregnant women who attended the obstetrics and gynecology outpatient clinic of the hospital, 197 pregnant women who met the research criteria (to be aged 18 and over, to have no communication issues, to be at least a primary school graduate, to have no psychiatric problems, to have no hypertension, lung, renal or cardiac problems, diabetes, autoimmune disease, or sexually transmitted diseases, to have no obstetric emergency, risky, or multiple pregnancy, to come routine pregnancy examination, to have a smartphone, to use the internet on the phone, and to have given informed consent) were included in the study.

2.4. Data Collection and Data Collection Tools

The pregnant women were given information about the research. After obtaining verbal consent from those who agreed to participate, the data were collected by the one-to-one interview method in a suitable environment in the outpatient clinic. Each interview took 30 minutes on average. The data of the study were collected using a Pregnancy Information Form, the Fear of COVID-19 Scale, and the Cyberchondria Severity Scale.

2.4.1. Pregnancy Information Form: The form consisted of nine questions about sociodemographic information and information about the scope of the research.

2.4.2. Fear of COVID-19 scale (FCV-19S): This scale was developed by Ahorsu et al. (2020) and adapted to Turkish by Artan et al. (2021). It consists of seven questions and all items of the scale are scored positively. The questions are ranked on a 5-point Likert-type scale. A score of between 7 and 35 is obtained from the scale. A high score indicates that the fear of COVID-19 level is 'high' (Ahorsu et al., 2020). In the Turkish validity and reliability study of the scale, the Cronbach alpha value was found to be 0.87 (Artan et al., 2021). In this study, the Cronbach alpha value of the scale was 0.76.

2.4.3. Cyberchondria Severity Scale (CSS): This scale was developed by McElroy in 2014 to measure the level of cyberchondria in individuals and adapted to Turkish by Uzun et al. in 2016. It is a psychometric scale consisting of 33 items that are ranked on a 5-point Likert-type scale and five subscales. The subscales are compulsion, distress, excessiveness, reassurance, and mistrust of medical professional. The total score obtainable from the scale is between 33 and 165. A high score on the scale indicates a high level of cyberchondria and a high score for any of its subscales indicates a high level for that subscale (McElroy and Shevlin, 2014). The Cronbach alpha coefficient of the total scale is 0.89 (Uzun, 2016). In this study, the Cronbach alpha value was 0.82 for the total scale and 0.76, 0.60, 0.72, 0.60, and 0.33 for its subscales respectively.

*Sorumlu yazar: burcudmr04@gmail.com

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2.5. Ethical Considerations

Ethical permission for the research was obtained from the Clinical Research Ethics Committee of the Health Sciences University Van Training and Research Hospital (Decision dated 25.03.2021 and numbered 2021/7). Verbal and written informed consent were obtained from the pregnant women who participated in the study. The study was conducted in accordance with the principles of the Declaration of Helsinki.

2.6. Limitations of the research

The data of this research were collected in a single center and in a specific time period, and the study was carried out with voluntary pregnant women using smartphones and the internet. These are the limitations of the study and the results obtained can only be generalized to the pregnant women who participated in this study. The research may not clearly reflect cyberchondria and coronaphobia as it did not include pregnant women who exhibited avoidance behavior due to the pandemic. Furthermore, the use of self-report scales may affect the quality of the data. Another limitation is related to the period in which the data were collected (April-May 2021). The study thus presents data from a period when the pandemic was a little more under control than before, restrictions had been lifted, vaccination programs started, and a renewed sense of security, albeit only partial, had begun to be felt.

2.7. Data Analysis

The data were analyzed with the SPSS-23 package program and the significance level was taken as $p<0.05$. The distribution of the data was determined with the Kolmogorov-Smirnov test. Parametric tests were used for normal distribution and non-parametric tests were used for the variables without normal distribution. Mean, frequency, one-way analysis of variance, the independent samples t-test, the Mann-Whitney U test (Z), Kruskal-Wallis correlation and regression analyses (KW) were used in the analysis of the data.

3. Results

The pregnant women participating in the study were asked about some of their sociodemographic characteristics and their mean scale scores according to these characteristics are given in Table 1. Of the pregnant women, 53.3% were in the age range 28-37; 15.7% had an income less than their expenses; 36% had received high school or higher education. 40.1% of the pregnant women were at ≥36 gestational weeks. The majority of the pregnant women had no chronic disease (82.2%), had no allergies to food, drugs, or other allergic agents before and during pregnancy (87.8%), did not have COVID-19 (83.8%), and mostly obtained health-related information from the internet (54.3%).

When the mean FCV-19S score of the pregnant women participating in the study was evaluated according to their income status, it was seen that the mean score of the pregnant women with an income less than their expenses was 23.58±4.87. It was found that there was a statistically significant difference between the groups in terms of the mean score, and the pregnant women with an income less than their expenses had higher scores ($p<0.05$, Table 1). No statistically significant correlation

*Sorumlu yazar: burcudmr04@gmail.com

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was determined between the total mean FCV-19S score of the pregnant women and their age, education level, gestational week, chronic disease status, allergic status, COVID-19 infection, and status of obtaining health-related information (p>0.05, Table 1).

When the mean CSS score of the pregnant women participating in the study was examined according to their allergic status, the mean score was 96.21±17.63 in those who were allergic and 89.41±13.75 in those who were non-allergic. It was determined that the differences in the mean scores of the groups were statistically significant and those who were allergic had high scores (p<0.05, Table 1). There was no significant correlation between the mean CSS score of the pregnant women and their age, income status, education level, gestational week, chronic disease status, COVID-19 infection, and status of obtaining health-related information (p>0.05, Table 1).

Table 1. Comparison of the Pregnant Women's Mean Scores on the Pregnancy Information Form, CSS and FCV-19S (N=197).

Characteristics	**n**	**%**	**FCV-19S Mean±SD**	**Test and p**	**CSS Mean±SD**	**Test and p**
Age						
18-27	92	46.7	21.00±4.92	F=2.052	91.31±14.96	KW=7.187
28-37	105	53.3	22.08±4.82	p=0.108	90.58±12.57	p=0.066
Income status						
Income more than expenses (A1)	82	41.6	21.50±4.89	KW=8.654 **p=0.013**	91.83±13.78	KW=4.568
Income equal to expanses (A2)	84	42.6	20.47±4.81	Difference **A2-A3**	87.40±13.79	p=0.102
Income less than expenses (A3)	31	15.7	23.58±4.87		93.71±16.56	
Education level						
Primary school	61	31.0	21.60±4.85	F=1.398	90.15±13.11	F=0,534
Secondary school	65	33.0	21.97±4.70	p=0.249	91.62±16.92	p=0.587
High school or over	71	36.0	20.61±5.20		89.06±12.98	
Gestational week						
≤25 weeks	34	17.3	20.94±3.70	F=2.013	91.71±10.08	KW=0.597
26-30 weeks	53	26.9	21.26±4.00	p=0.113	88.75±11.33	p=0.897
31-35 weeks	31	15.7	17.68±5.69		91.68±16.00	
≥36 weeks	79	40.1	22.24±5.53		90.04±17.05	
Chronic disease status						
Yes	35	17.8	21.34±5.05	z=-0.048	88.26±12.42	z=-0.617
No	162	82.2	21.37±4.94	p=0.962	90.67±14.80	p=0.537
Allergic status						
Yes	24	12.2	21.04±4.54	t=-0.341	96.21±17.63	z=-2.001
No	173	87.8	21.41±5.01	p=0.733	89.41±13.75	**p=0.045***
COVID-19 infection						
Yes	32	16.2	22.19±5.44	t=1.027	89.28±15.42	z=-1.037
No	165	83.8	21.21±4.84	p=0.306	90.42±14.24	p=0.300
Source of health-related information						
TV	33	16.8	22.85±5.46	F=1.892	92.33±15.01	z=0.37
Internet	107	54.3	20.94±4.65	p=0.153	91.74±15.55	p=0.848
Doctors and health professionals	57	28.9	21.30±5.09		86.21±15.04	
Sharing internet-based information with health specialist						
Yes	36	18.3	21.33±5.09	t=-0.043	92.36±15.31	Z=-0.623
No	161	81.7	21.37±4.93	p=0.967	89.76±14.20	p=0.533

T=independent samples t test, KW=Kruskal Wallis, Z= Mann-Whitney U, F=One-way ANOVA

*Sorumlu yazar: burcudmr04@gmail.com

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Table 2 shows the mean scores of the pregnant women included in the study for the FCV-19S, and the CSS and its subscales. The mean FCV-19S score of the pregnant women was 21.37±4.94 and their mean CSS score was 90.24±14.40. The mean scores for the CSS subscales were 16.93±5.20 for compulsion, 20.81±4.64 for distress, 23.81±5.16 for excessiveness, 17.30±4.04 for reassurance, and 11.36±2.51 for mistrust of medical professional.

Table 2. Mean Scores of Pregnant Women on the CSS, its Subscales and the FCV-19S

Scales		**Min-Max**	**Mean ± SD**
Total Fear of COVID-19 Scale (FCV-19S)		10-34	21.37±4.94
Cyberchondria Severity Scale (CSS)	Compulsion	8-32	16.93±5.20
	Distress	9-37	20.81±4.64
	Excessiveness	9-38	23.81±5.16
	Reassurance	7-30	17.30±4.04
	Mistrust of medical professional	4-15	11.36±2.51
	Total	59-140	90.24±14.40

Min=minimum, Max=Maximum, SD= Standard deviation

The relationship between the mean FCV-19S and CSS scores of pregnant women is given in Table 3. In the correlation analysis, it was found that there was a weak and positive correlation between the pregnant women's total FCV-19S score and the total CSS score, as well as the compulsion, distress, and excessiveness subscale scores ($p<0.05$).

Table 3. The Relationship between Mean CSS-Subscale Scores and Mean FCV-19S Score

Scales		**Cyberchondria Severity Scale (CSS)**					
		Compulsion	Distress	Excessiveness	Reassurance	Mistrust of medical professional	Total CSS
Fear of COVID-19 Scale (FCV-19S)	r	0.307**	0.326**	0.236**	0.127	-0.012	0.353**

*** p<0.01, r= correlation*

Table 4 presents the results of the regression analysis performed to determine the effect of fear of COVID-19 on the CSS and its subscales in the pregnant women. It was determined that the fear of COVID-19 had a positive, superficial, and significant effect on the compulsion ($p<0.05$; $\beta=0.249$) and distress ($p<0.05$; $\beta= 0.196$) subscales of CSS.

Table 4. Regression Analysis of the FCV-19S, and the CSS and its Subscales

	CSS	**B**	**SEB**	**95% Confidence interval**	**β**	**t**	**R^2**	**F**
FCV-19S	Compulsion	0.237	0.078	0.084-0.390	0.249*	3.058	0.154	8.161
	Distress	0.209	0.089	0.034-0.385	0.196*	2.354		
	Excessiveness	0.112	0.073	-0.032-0.257	0.117	1.536		
	Reassurance	-0.063	0.096	-0.253-0.126	-0.052	-0.659		
	Mistrust of medical professional	0.019	0.138	-0.254-0.292	0.010	0.138		

**p<0.05*

*Sorumlu yazar: burcudmr04@gmail.com

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4. Discussion

The COVID-19 pandemic has affected the mental health of pregnant women as well as that of the general population. The uncertainties during the COVID-19 process have caused fear in pregnant women. The research findings on how their fear and concerns have been affected by accessing health-related information regarding both themselves and their babies on the internet are discussed below within the scope of the relevant literature.

Pregnant women who stated that their income was less than their expenses experienced the fear of COVID-19 more than the other groups ($p<0.05$, Table 1). It was seen that those pregnant women whose economic condition was not good were more afraid of the COVID-19 disease than the others. Economic responsibilities that increase alongside the economic difficulties caused by COVID-19 are risk factors for the mental health of pregnant women (Donnelly and Farina, 2021). In a similar study, the coronaphobia scores of pregnant women with low income were reported to be high, supporting the result of this research (García-Fernández et al., 2021). In another study, it was stated that pregnant women are more economically concerned and affected by coronaphobia (Karkin et al., 2021).

It can be said that the pregnant women included in the study were moderately coronaphobic according to their mean FCV-19S score (21.37±4.94). Likewise, similar studies reported that pregnant women were moderately coronaphobic (Durmus et al., 2021; Naghizadeh and Mirghafourvand, 2021; Tikka et al., 2021). In another study conducted during the COVID-19 pandemic, it was determined that 55.4% of pregnant women had normal anxiety levels, that 30.5% had mild anxiety, and that 11.3% had moderate anxiety (Demir and Kılıc, 2020). In a study conducted with pregnant women in Iran during the COVID-19 pandemic, it was reported that approximately 50% of the participants of the study experienced pandemic-related anxiety (Eftati-Daryani et al., 2020). Some studies reported that the level of coronaphobia in pregnant women was slightly above the average (Karkin et al., 2021; García-Fernández et al., 2021). In many studies, it was stated that the anxiety level of pregnant women increased after the COVID-19 pandemic (Wu Zhang, 2020; Durankus and Aksu, 2020; Guler and Hatirnaz, 2020; Sahu et al., 2021; Preis et al. 2020). The reason for the differences between these studies may be associated with the time of data collection and the different strategies applied by different countries with regard to pregnant women (Tikka et al., 2021).

The current study found that the mean CSS scores were higher in allergic pregnant women than in pregnant women without allergies ($p<0.05$, Table 1). In terms of the health topics that pregnant women search most about on the internet, pregnancy complications are always the most pressing issue (Wexler et al., 2020; Ahmadian et al., 2020). One pregnancy complication is the rhinological problems encountered frequently during pregnancy (Gumussoy et al., 2017). Confusing the rhinological problems experienced by pregnant women with clinical symptoms of COVID-19 (Gumussoy et al., 2017), the unknown effects of coronavirus on pregnant women and fetuses, and the physiological susceptibility of pregnant women to infections may increase health anxiety in pregnant women (Karkin et al., 2021; Alkan-Ceviker, 2020). It is thought that the cyberchondria levels of pregnant women who search online in order to reduce their anxiety increase when they are not able to access sufficient and reliable information sources.

*Sorumlu yazar: burcudmr04@gmail.com

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It can be said that the pregnant women included in the study were moderately cyberchondriac according to their mean CSS score (90.24±14.40). When the subscales of the CSS – compulsion, distress, excessiveness, reassurance, and mistrust of medical professional – were evaluated separately, it was seen that the mean score of the pregnant women in each subscale was at a moderate level. In a similar study conducted in Turkey, it was found that cyberchondria was at a moderate level in pregnant women who did not receive childbirth preparation training and that pregnant women who received childbirth preparation training had lower levels of cyberchondria (Beydag and Guldur, 2019).

When the relationship between the mean FCV-19S and CSS scores of the pregnant women participating in the study was examined, it was seen that the pregnant women demonstrated more cyberchondriac characteristics, especially in terms of compulsion, distress, and excessiveness, as the fear of COVID-19 increased. In the regression analysis performed to determine the effect of fear of COVID-19 in the pregnant women on the CSS and its subscales, it was determined that the pregnant women experienced more compulsion and distress as the fear of COVID-19 increased. Obsessively and repeatedly searching for information on the internet in order to reduce anxiety is expressed by the compulsion subscale for cyberchondria. No study that evaluates the fear of COVID-19 and cyberchondria together in pregnant women is available in the literature. However, it has been stated that the level of cyberchondria increases in pregnant women as the level of health literacy increases (Beydag and Guldur, 2019). In another study, it was reported that pregnant women use the internet quite widely as a source of information (Ozturk et al., 2020). In the current study, it was seen that the majority of pregnant women (54.3%) used the internet to look for health-related information. In today's digital era, it is largely inevitable that most pregnant women will use the internet in this way (Baker and Yang, 2018; Bjelke et al., 2016; Jacobs et al., 2019; Wexler et al., 2020; Ahmadian et al., 2020). In the literature, it has been stated that most pregnant women perceive the information they find online to be reliable and of high quality, and do not share it with health professionals (Fredriksen et al., 2016; Jacobs et al., 2019; Ahmadian et al., 2020). In another study conducted with pregnant women, the quality of internet-based information was analyzed and it was stated that 24.3% of the information had no reliable evidence behind it, and that 5.5% was actively harmful (Ellis and Roberts, 2019). Given that the COVID-19 pandemic is current and ongoing, and considering the time when research data were collected, reliable information on COVID-19 was of necessity limited. When the relevant literature and the results of this research are evaluated together, it is thought that the widespread use of the internet by the pregnant women for accessing information about health, the inadequacy of internet sources of information, the limited number of reliable sources, not discussing the information obtained with a health professional, and approaching the information uncritically all affected the women's levels of cyberchondria.

5. Conclusion

In this study, it was concluded that the fear of coronavirus and cyberchondria were at average levels in the pregnant women and that cyberchondria levels increased as the fear of coronavirus increased. The health of pregnant women is important for both their and their infants' health. Pregnant women

can use the internet as a source of information, but it is important that they share the information they obtain with their health professionals and receive counseling about how to have a healthy pregnancy. Choosing the right source of information about the normal process of pregnancy and risky situations will positively affect the quality of the process and the mental health of the pregnant individual. Information about the coronavirus should be provided by the healthcare team members who follow up on pregnant women in order to reduce any concerns and anxiety they may have. Nurses should pay attention not only to the physical health of pregnant women but also their mental health, provide support appropriate to the concerns of pregnant women, and offer them advice (Chen et al., 2020; Cuvadar et al., 2020). For this reason, nurses should recommend appropriate websites where pregnant women can access accurate and reliable information.

Authors Contributions

Topic selection: BDG, VG; Design: BDG, VG; Planning: BDG, VG; Data collection: YS; Data analysis: YS; Article writing: BDG, VG, YS; Critical review: BDG, VG, YS.

Conflict of Interest

The authors declare that there are no conflict of interests.

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*Sorumlu yazar: burcudmr04@gmail.com

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ARAŞTIRMA MAKALESİ

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*Sorumlu yazar: burcudmr04@gmail.com

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ARAŞTIRMA MAKALESİ