



RESEARCH ARTICLE / ARAŞTIRMA YAZISI

# Being pregnant in Covid-19: Fear of Giving Birth, Fear of Covid-19, and Marital Adjustment

## Covid-19'da Hamile Olmak: Doğum Korkusu, Covid-19 Korkusu ve Evlilik Uyumu

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### Abstract:

This research aims to examine the relationship between fear of childbirth, fear of Covid-19, and marital adjustment. In line with this general-purpose, differences in fear of childbirth, fear of Covid-19, and marital adjustment levels were also examined according to demographic variables. The research was carried out with 382 pregnant women who were followed up in the obstetrics clinic of a private hospital in Ankara. Demographic Information Form, Wijma Birth Expectation-Experience Scale (W-DEQ) Version A, Fear of Covid-19 Scale, and Revised Dynasty Scale were used as data collection tools. Independent Sample T-test and One-Way Analysis of Variance (ANOVA) were used to compare the scores obtained from fear of childbirth, fear of Covid-19, and spousal adjustment according to demographic variables. The relationship of the variables with each other was tested with Pearson Correlation analysis, and the predictive effect of fear of Covid-19 and spousal adjustment on fear of childbirth was examined by regression analysis. As a result of the research, while there was a difference in fear of birth according to age, there was a difference in both fear of birth and fear of Covid-19 according to health problems. In addition, the fear of Covid-19 differs according to the gestational week. A positive relationship was found between fear of childbirth and fear of Covid-19 and a negative relationship between marital adjustment. In addition, it was determined that fear of Covid-19 and spousal adjustment significantly predicted fear of childbirth.

**Keywords:** pregnant, childbirth, Covid-19, fear, marital adjustment

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**Öz:**

Bu araştırmanın amacı doğum korkusu, Covid-19 korkusu ve evlilik uyumu arasındaki ilişkiyi incelemektir. Bu genel amaç doğrultusunda ayrıca demografik değişkenlere göre doğum korkusu, Covid-19 korkusu ve evlilik uyumu düzeylerinde farklılık durumları incelenmiştir. Araştırma Ankara'da özel bir hastanenin kadın doğum kliniğinde takibi yapılan 382 gebe ile yürütülmüştür. Veri toplama araçları olarak Demografik Bilgi Formu, Wijma Doğum Beklentisi-Deneyimi Ölçeği (W-DEQ) A Versiyonu, Covid-19 Korkusu Ölçeği ve Yenilenmiş Çift Uyum Ölçeği uygulanmıştır. Demografik değişkenlere göre doğum korkusu, Covid-19 korkusu ve evlilik uyumundan alınan puanların karşılaştırılması için Bağımsız Örneklem T testi ve Tek Yönlü Varyans Analizi (ANOVA) kullanılmıştır. Değişkenlerin birbirleriyle ilişkisi ise Pearson Korelasyonanalizi ile test edilmiş olup, Covid-19 korkusu ve evlilik uyumunun, doğum korkusunu yordayıcı etkisi regresyon analiziyle incelenmiştir. Araştırma sonucunda yaşa göre doğum korkusunda farklılık saptanırken, sağlık sorununa göre hem doğum korkusunun hem de Covid-19 korkusunda farklılık saptanmıştır. Ayrıca gebelik haftasına göre de Covid-19 korkusu farklılık göstermektedir. Doğum korkusu ile Covid-19 korkusu arasında pozitif yönde, evlilik uyumu arasında ise negatif ilişki bulunmuştur. Ayrıca Covid-19 korkusu ile evlilik uyumunun, doğum korkusunu anlamlı biçimde yordadığı belirlenmiştir.

**Anahtar Kelimeler:** gebe, doğum, Covid-19, korku, evlilik uyumu

**Introduction**

Pregnant women and their fetuses are in the high-risk group for infectious diseases. For this reason, it is thought that the Covid-19 epidemic, which has affected the whole world in recent years, may also have an effect on the fear of childbirth. While the physiological changes of pregnant women make them more susceptible to infection, the effect of the cardio respiratory system causes respiratory failure (Dashraath, et al., 2020). It is stated that corona virus infections seen in pregnant women lead to serious complications and diseases such as premature birth (Allotey, et al., 2020), needing more intubated and intensive care needs, and risk for the baby in case of chronic diseases in the mother-to-be (Aktaş et al., 2020; Gök et al., 2020).

Therefore, as a result of the general uncertainty caused by the inability to predict the outcome of the birth process in pregnant women (Çiçek & Mete, 2015; Rouhe, et al., 2009), it is a possible result to expect the anxiety and stress observed in the expectant mother to increase during the pandemic period. Pregnant women not knowing how to give birth, feeling inadequate and ignorant, thinking that they will have too much pain, not trusting the health personnel, fear of death due to the thought that the baby will be harmed at the time of birth can cause fear of birth (Bülbül, et al., 2016).

It is understood from the studies conducted during the pandemic period that the fear of childbirth is related to Covid-19. Studies show that isolation and quarantine practices applied to prevent the risk of transmission of those infected with the virus, combined with the thought that the baby will not be able to breastfeed again, can cause fear of childbirth (Chua, et al., 2020; Eshre, 2020; Liu, et al., 2020). It is also stated that the effects of the Covid-19 virus on pregnant women are not known clearly and the uncertainty experienced increases the fear of Covid-19 (Çuvadar, et al., 2020; Li, et al., 2020; Stein, 2020; Wang, et al., 2020).

On the other hand, there are studies indicating the relationship between fear of childbirth and marital adjustment. Experiencing emotions of different intensities

during pregnancy may prevent adaptation to new roles (Taşkın, 2016). The fear of childbirth that may be experienced during this period can affect not only the pregnant woman but also her relations with her family members. Studies have shown that there is a relationship between fear of childbirth and marital adjustment, and that those with fear of childbirth have lower marital adjustment (Dahlberg, et al., 2016; Güleç, et al., 2014; Laursen, et al., 2008; Saisto, et al., 2001; Uçar & Gölbaşı, 2015).

It has been stated that while marital adjustment and marital satisfaction increase the psychological well-being of the spouses, there is a decrease in the level of psychological well-being when marital adjustment decreases (Sardoğan & Karahan, 2005). Erbek et al., (2005) stated that those with high marital adjustment communicate effectively with each other, reach consensus on family-related issues, and solve problems with problem-focused solving skills. For this reason, it is thought that the high level of marital adjustment of pregnant women will minimize their fears by receiving more support from their spouses. In line with the explanations made, it is thought that the fear of childbirth, fear of Covid-19 and marital adjustment are in a relationship in pregnant women. It is thought that it is important to use different variables in investigating the negative effects of the Covid-19 epidemic, in order not to find a similar study in the relevant literature in this field and to better understand the negative effects of the pandemic process. (Mamun & Griffiths, 2020).

The aim of this research in this direction is to examine the relationship between fear of birth, fear of Covid-19 and marital adjustment. For this general purpose, fear of birth, fear of Covid-19 and marital adjustment levels were also examined according to demographic variables.

**Methods****Model**

The correlation model was used in this study. In this model, it is aimed to determine the level of the relationship between two or more variables (Karasar, 2002). Ethical permissions for the study were approved by the Near East University Publication Ethics Committee for Social Sciences. The consent form was read to the participants

before the study, the voluntary basis was stated and they were signed.

### Population and Sample

The population of the study consists of pregnant women in Ankara. According to the birth statistics of the Turkish Statistical Institute [TÜİK], 2020, a total of 63514 births took place in the province of Ankara in 2020. Based on these deliveries, it can be said that 63514 pregnant women gave birth. Accordingly, the sample was determined as 382 people according to the 95% confidence level (Yazıcıoğlu & Erdoğan, 2004). The sample of the study consisted of 382 pregnant women who were followed up in the obstetrics clinic of a private hospital in Ankara. The sample of the study was chosen by purposive sampling, which is one of the non-random sampling methods. In the purposive sampling method, depending on the purpose of the research, the sample group that helps to obtain detailed findings is determined. No random selection is made in this sampling method (Büyüköztürk et al., 2018)

### Data Collection Tools

#### Demographic Form

In the form created by the researchers, there are 3 questions about the age of the pregnant women who participated in the research, whether the pregnancy caused a health problem or not, and at what week of pregnancy it was.

#### Wijma Birth Expectation-Experience Scale (W-DEQ) Version A

W-DEQ version A was developed by Wijma et al. in 1998 to detect the fear of childbirth experienced by women. The scale consists of 33 items. The scale was adapted to Turkish culture by Körükcü et al. (2012), and its validity and reliability were evaluated. The Cronbach alpha coefficient was found to be 0.89. The Cronbach's alpha coefficient of the scale for the current study was 0.79 for the first measurement and 0.95 for the second measurement.

#### Fear of Covid-19 Scale

The scale was developed by Ahorsu et. al, (2020) to measure the fear levels of individuals due to Covid-19. Turkish validity and reliability were performed by Ladikli et al., (2020). The items of the scale were created based on a comprehensive review of existing scales on fear, expert assessments, and participant interviews. The scale has a single factor structure, a five-point likert type, and consists of seven items. The Cronbach Alpha internal consistency coefficient of the scale was found to be 0.86.

#### Revised Dyadic Adjustment Scale (RDAS)

Developed by Spanier (1976), the dyadic compatibility scale consisting of 32 items was evaluated by Busby et al. (1995) and reduced to 14 items. RDAS was adapted to Turkish culture by calculating its psychometric values by Bayraktaroğlu & Çakıcı (2017). The scale was developed to evaluate the relationship quality of married or cohabiting couples in marriage or similar bilateral relationships. The Cronbach's alpha coefficients of the three sub-dimensions of the RDAS were .87, .80, .80, and .74 for the total score, satisfaction, consensus, and consensus subscales, respectively. The Cronbach alpha coefficient was calculated as .88.

#### Data Analysis Method

SPSS program was used in the analysis of the data obtained in this study. In order to examine whether there is a significant difference in terms of demographic characteristics in the analysis of the data, independent group t-test was used for variables with two categories, and ANOVA analysis was used for variables with three or more groups. In addition, the correlation strength measurements calculated according to the variance that is, the effect size (eta squared) values, which show how effective the independent variable is on the dependent variable, were also determined (Cohen, 1988). The relationship between fear of childbirth, fear of Covid-19, and marital adjustment was analysed with the Pearson Correlation test, and the predictive effect of fear of Covid-19 and marital adjustment on fear of birth was examined by regression analysis.

## Results

**Table 1.** Comparison of Pregnant Women's Average Scores According to Age

Scales	Age	N	$\bar{X}$	SD		Ss	df	M.square	F	p
W-DEQ	19-28	128	56.08	17.89	B. groups	2764.892	2	1382.446	4.255	<b>0.015*</b>
	29-32	131	59.76	18.09	W. groups	123131.582	379	324.885		
	33-42	123	53.19	18.09	Total	125896.474	381			
Fear of Covid	19-28	128	18.70	5.72	B. groups	120.106	2	60.053	1.851	0.158
	29-32	131	19.53	5.83	W. groups	12293.192	379	32.436		
	33-42	123	20.07	5.52	Total	12413.298	381			
RDAS	19-28	128	55.52	7.09	B. groups	46.091	2	23,045	0.45	0.638
	29-32	131	54.86	6.84	W. groups	19426.32	379	51,257		
	33-42	123	54.73	7.56	Total	19472.411	381			

W-DEQ: Wijma Birth Expectation-Experience Scale RDAS: Revised Dyadic Adjustment Scale

Table 1 presents the results of the ANOVA analysis for the comparison of W-DEQ, Covid-19 Fear Scale, and RDAS scores according to the age variable. Accordingly, there is a significant difference in W-DEQ scores according to age

[F(2-379)= 4.255; p≤.05; eta kare (η<sup>2</sup>)=.07]. According to Post Hoc analyses, the level of fear of childbirth of pregnant women aged 29-32 is higher than those aged 33-42.

**Table 2** Comparison of the Mean Scores of the Pregnant According to the Problem Occurrence in Health Status

Scales	Health Problem	N	$\bar{X}$	sd	t	p
W-DEQ	Yes	17	64.94	20.20	1.987	<b>.048*</b>
	No	365	56.01	18.00		
Fear of Covid-19	Yes	17	20.76	6.38	.991	.322
	No	365	19.36	5.67		
RDAS	Yes	17	50.59	6.86	-2.647	<b>.008*</b>
	No	365	55.25	7.10		

W-DEQ: Wijma Birth Expectation-Experience Scale RDAS: Revised Dyadic Adjustment Scale

In Table 2, independent sample t-test analysis results are given for the comparison of the scores obtained from the W-DEQ, the Covid-19 Fear Scale, and the RDAS according to the state of having health problems in pregnant women. Accordingly, the W-DEQ scores of pregnant women who had health problems [t=-1.987;

p≤.05; eta kare (η<sup>2</sup>)=.01]. were significantly higher than those who did not have health problems. Conversely, those who do not have health problems [t=-2.647; p≤.05; eta kare (η<sup>2</sup>)=.02].) are significantly higher than those who have health problems.

**Table 3:** Comparison of the Average Scores of the Pregnant According to the Week of Gestation

Scales	Week	N	$\bar{X}$	SD	Ss	df	M.square	F	p	
W-DEQ	1-13	20.00	56.85	18.21	B. groups	235.575	2	117.788	0.355	0.701
	14-26	133.00	57.44	18.32	W.groups	125660.899	379	331.,559		
	27-40	229.00	55.78	18.14	Total	125896.474	381			
Fear of Covid	1-13	20.00	22.30	7.47	B. groups	226.756	2	113.378	3.526	<b>0.030*</b>
	14-26	133.00	18.77	4.97	W.groups	12186.542	379	32.154		
	27-40	229.00	19.55	5.87	Total	12413.298	381			
RDAS	1-13	20.00	55.55	6.84	B. groups	32.288	2	16.144	0.315	0.730
	14-26	133.00	54.65	7.12	W.groups	19440.123	379	51.293		
	27-40	229.00	55.22	7.21	Total	19472.411	381			

W-DEQ: Wijma Birth Expectation-Experience Scale RDAS: Revised Dyadic Adjustment Scale

In Table 3, the results of the ANOVA analysis regarding the comparison of W-DEQ, Covid-19 Fear Scale, and RDAS scores according to the gestational week variable are given. Accordingly, there is a significant difference in the Covid-19 Fear Scale scores according to the gestational

week [F(2-379)= 3.526; p≤.05; η<sup>2</sup>=.09]. According to Post Hoc analysis, Covid-19 fear level of pregnant women who are in the 1-13th week(first trimester)is significantly higher than those in the 14-26th week (second trimester) of pregnancy.

**Table 4.** The Relationship of Fear of Birth, Fear of Covid-19, and Marriage Adjustment

	W-DEQ	Fear of Covid-19 Scale	RDAS
W-DEQ	r		
	p		
Fear of Covid-19 Scale	r	.130	
	p	<b>.011*</b>	
RDAS	r	-.415	-.321
	p	<b>.000*</b>	<b>.000*</b>

W-DEQ: Wijma Birth Expectation-Experience Scale RDAS: Revised Dyadic Adjustment Scale

In Table 4, correlation analysis results regarding the examination of the linear relationship between fear of childbirth, fear of Covid-19 and marital adjustment are given. Accordingly, a positive correlation was determined

between W-DEQ and Fear of Covid-19 scores ( $r=.130$ ;  $p\leq.05$ ). There was a negative correlation between W-DEQ and RDAS scores ( $r=-.415$ ;  $p\leq.05$ ), and between fear of Covid-19 and RDAS scores ( $r=-.321$ ;  $p\leq.05$ ).

**Table 5.** Examination of the Predictive Effect of Fear of Covid-19 on Fear of Birth

Variable	B	Standart Error B	$\beta$	t	p	F	Model (p)
Constant	48.396	3.279		14.758	.000	6.489	.011
Fear of Covid-19	.413	.162	.130	2.547	.011		
<b>R=</b> .130	<b>R<sup>2</sup>=</b> .017						

According to the regression analysis performed to determine the predictive effect of fear of Covid-19 on fear of birth, it was determined that fear of Covid-19 significantly predicted fear of birth ( $F=6.489$ ;

$p\leq.05$ ). It was determined that as the fear of Covid-19 increased, the fear of birth also increased ( $\beta=.130$ ;  $p\leq.05$ ).

**Table 6.** Examination of the Predictive Effect of Marriage Adjustment on Fear of Birth

Variable	B	Standart Error B	$\beta$	t	p	F	Model (p)
Sabit	114.449	6.588		17.374	.000	78.926	.000
Evlilikuyumu	-1.054	.119	-.415	-8.884	.000		
<b>R=</b> .415	<b>R<sup>2</sup>=</b> .172						

According to the regression analysis performed to determine the predictive effect of the marital adjustment on fear of birth, it was determined that marital adjustment significantly predicted fear of birth ( $F=78.926$ ;  $p\leq.05$ ). It was found that fear of childbirth increased as marital adjustment decreased ( $\beta= -.415$ ;  $p\leq.05$ ).

## Discussion

In this study, it was aimed to examine the relationship between fear of childbirth, fear of Covid-19, and marital adjustment in pregnant women. In addition, it was also examined whether these three variables differed according to the demographic characteristics of the pregnant women.

In this direction, it was determined that the fear of childbirth differs according to age. Pregnant women aged 29-32 had higher fear of childbirth than those aged 33-42. There are different findings on the subject in the literature. While some studies have determined that the fear of childbirth increases as the age decreases (Gao et al., 2015; Hofberg & Ward, 2003; Laursen, et al., 2008), some studies indicate that the fear of childbirth increases as the age increases (Büyükbayrak, et al., 2010; Nieminen, et al., 2009). Although this study supports the studies stating that the fear of childbirth decreases with age, the researchers think that this difference may be associated with the younger pregnant women's lower knowledge of birth and less birth experience.

Another result of the study, in parallel with the studies in the literature (Cumberland, 2010; Köriükcü, et al., 2017; Ryding, et al., 1998; Storksen, et al., 2012), the level of fear of childbirth in pregnant women with health problems is found to be higher than those without health problems. However, Arslantaş et al., (2020) stated that, unlike these studies, as a result of the research conducted with pregnant women in the last trimester, physical health problems of pregnant women do not have an effect on fear of childbirth. This different finding can be explained by the fact that the sample group consisted of only pregnant women in the last trimester.

In the study, the marital adjustment level of those who did not have health problems was found to be significantly higher than those who had health problems. Studies in the literature have reported that marital quality and marital adjustment are associated with physical and mental health (Bloch, et al., 2010; Coyne & Anderson, 1999; Fidanoğlu, 2007; Holt-Lunstad, et al., 2008; Lim, 2000). Therefore, while the absence of health problems is seen as an important condition that increases marital adjustment (Houseknecht & Macke, 1991), it is also stated that good health increases marital adjustment (Kitamura, et al., 1998). Therefore, the study finding supports the literature.

In the study, there was also a difference according to the gestational week, which is the last demographic variable. According to this, Covid-19 fear level of those in the 1-13th week (first trimester) of

pregnancy found to be higher than those in the 14-16th week (second trimester) of pregnancy. In the limited literature about the issue, one study conducted with pregnant women who diagnosed with Covid-19, it was stated that 37% of the pregnant women gave birth before the 37th week of pregnancy and 96% gave birth by caesarean section (Della Gatta, et al., 2020). In another study conducted with pregnant women, it was determined that 37% of the pregnant women gave birth before the 37th week of pregnancy and 70% of them gave birth by caesarean section (Elshafeey, et al., 2020). It has been reported that there is no increase in the frequency of natural abortions in pregnant women and that the data on this issue in the first trimester are limited (Yan, et al., 2020). More than 95% of newborns were found to be in good condition, and it has been reported that emerging neonatal complications are largely associated with premature birth (Li, et al., 2020).

In addition to these findings, it is stated that anxiety, which is commonly seen in pregnant women in the first trimester, is characterized by the retrospective fear of losing their life and and miscarriage. In the second trimester, while negative emotions decrease, it is stated that the pregnant women enter the process of adapting to motherhood and there is a decrease in anxiety (Simpson & Creen, 2008). The finding in this study, which is similar to the study of Simpson & Creen (2008), can also be explained by the difficulty experienced by pregnant women in the first trimester to get used to the pregnancy process in the Covid-19 pandemic and the fear of not knowing whether there will be disruption in the health care they will receive.

According to the correlation analysis conducted in this study, a positive relationship was determined between the fear of childbirth and the fear of Covid-19. In addition, in the regression analysis, it was determined that the fear of Covid-19 significantly predicted the fear of birth, and the fear of birth increased as the fear of Covid-19 increased. Fear of childbirth is affected by many factors. It has been determined that the level of anxiety and depression is high in pregnant women who have fear of childbirth (Uçar & Gölbaşı 2015). In the Covid-19 pandemic, the thought that pregnant women will be separated from their babies, cannot breastfeed and a healthy birth will not occur has been associated with fear of childbirth (Çuvadar, et al., 2020; Liu, et al., 2020). It has been stated that the fear of being separated from their baby in the early period, the negative traces that the Covid-19 epidemic will leave on the mother and the baby are not fully known and that pregnant women may cause anxiety and fear in the thought of Covid-19 (Chua, et al., 2020). The limited data on the effect of Covid-19 on pregnant women has increased the fear of pregnant women against the virus (Liu, et al., 2020). In a study conducted with pregnant women, it was reported that

the risk of transmission to the baby, the negative impact on the health of the baby, and the fear of stillbirth cause anxiety in pregnant women (Melender, 2002).

It has been determined that Covid-19 has a strong effect on causing fear, distress, and anxiety in pregnant women (Mızrak, Şahin & Kabakçı, 2020). The pandemic process has changed the routines of daily life and has led to a lack of trust in the health system. In addition, with the rapid spread of incomplete and incorrect information on social media, has caused fears and phobias in pregnant women (Asmundson & Taylor, 2020; Mızrak, Şahin & Kabakçı, 2020). On the other hand, Çuvadar et al. (2020) reported that the concern that having another child at home other than the baby to be born might cause problems during the isolation process further increasing anxiety in pregnant women. Therefore, in the light of all this information, it can be said that the positive relationship between the fear of childbirth and the fear of Covid-19 found as a result of the research is actually an expected finding before the research.

In the study, a negative relationship was determined between fear of childbirth and marital adjustment. In the regression analysis, it was determined that marital adjustment significantly predicted fear of birth, and as marital adjustment decreased, fear of birth increased. The fact that the spouses continue their marriage in harmony shows that the spouses provide emotional support to each other. While this allows pregnant women to adapt to pregnancy more easily, it helps to experience less emotional fluctuations during pregnancy, when there are serious psychological and physical changes, and to pass the pregnancy period more easily (Murray & McKinney, 2014; Van den Akker, 2012). In the absence of adequate spousal support, it has been reported that conditions such as antenatal anxiety, smoking, and depression are more common in pregnant women (Cheng, et al., 2016; Xie, et al., 2010). For this reason, fear of childbirth may develop in pregnant women whose feelings are ignored by their spouses and who cannot receive sufficient support (Yekenkunrıl & Mete, 2012). According to the statements made, individuals with high marital adjustment are expected to experience less fear of birth, while those with low marital adjustment are expected to experience more fear of birth.

As a result of the research, it was determined that there is a negative relationship between the fear of Covid-19 and marital adjustment. While the pandemic process caused individuals to experience mental difficulties, it caused a change in the daily housework routine, leading to an increase in domestic violence and conflicts, causing a decrease in the marital adjustment of the couples (Ergönen, et al., 2020; Gulati & Kelly, 2020). In addition, there

has been an increase in women's responsibilities at home within the scope of their gender roles, and their responsibilities in meeting the needs of children such as distance education, homework and course follow-up, play, and care have increased (Ünal & Gülseren, 2020). The economic, social, and spiritual difficulties experienced during the pandemic process have also caused conflict between spouses. It is also stated that there is an increase in divorces during this period (Hou, et al., 2020; Zhang, 2020). While these difficulties experienced during the pandemic process cause problems between spouses, it is thought that the fear of being infected with Covid-19 causes an increase in depression and anxiety symptoms and causes a decrease in marital adjustment.

In this study, it was determined that the fear of childbirth, fear of Covid-19, and marital adjustment were associated with each other among pregnant women. For this reason, it is thought that it is important for a healthy pregnancy process to inform pregnant women in detail about the Covid-19 process and its possible effects, especially during the birth process. It is thought that by providing psychological support to pregnant women, it will be

beneficial both to reduce their fears and to increase the functionality and marital adjustment by including the spouses in the process.

## Declarations

### Ethics Approval and Consent to Participate

Informed consent was obtained from all participants who agreed to participate in the study. YDÜ/SB/2021/1068 (Near East University, Social Sciences) numbered ethics committee approved taken from the Near East University Institute of Social Sciences on 06/04/2018.

### Consent for Publication

Not applicable.

### Availability of Data and Materials

Data sets used and / or analyzed during the study can be obtained from the relevant author upon appropriate request.

### Competing Interests

The author declares that no competing interests in this manuscript.

### Funding

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### Authors' Contributions

EU analyzed and interpreted the data and TE contributed to the writing of the article. All authors have read and approved the final version of the article.

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