MARMARA
MEDICAL JOURNAL

Original Article

https://dergipark.org.tr/tr/pub/marumj

The factors affecting the quality of life among women during the postpartum period

Gulsum Seyma KOCA[1], Yusuf CELIK[2], Huseyin Levent KESKIN[3], Pinar YALCIN BALCIK[1]

[1] Department of Health Care Management, Faculty of Economics and Administrative Sciences, Hacettepe University, Ankara, Turkey
[2] Department of Health Care Management, Faculty of Health Sciences, Marmara University, Istanbul, Turkey
[3] Department of Obstetrics and Gynecology, School of Medicine, Health Sciences University, Ankara, Turkey

Corresponding Author: Gulsum Seyma KOCA
E-mail: g.seymakoca@gmail.com

Submitted: 02.01.2022 **Accepted:** 22.06.2022

ABSTRACT

Objective: As healthcare has become increasingly patient-centered, outcomes such as disease-specific quality of life (QoL) have become increasingly important. This study aimed to determine the factors affecting the QoL of postpartum women and which factors make a difference and affect the QoL.

Patients and Methods: A total of 175 postpartum mothers participated in this study. The Euro QoL 5 Dimension 5 Level (EQ 5D-5L) scale was used to measure the health-related QoL of postpartum women.

Results: The QoL of women differed in age, delivery type, venous thromboembolism risk factors, parity, gravida, number of live births, and use of anticoagulant medication. According to multiple regression analyses, the "age" variable had a significant effect on the QoL. However, the variables of education, social security, employment status, and monthly income of the family were not significant determinants of QoL. Also, the "number of live births" variable did not significantly affect the QoL, other obstetric and clinical variables had a significant effect on the QoL. The gravida increased the QoL but the number of miscarriages and the venous thromboembolism risk score decreased the QoL.

Conclusions: This study shows that, the QoL of women varies according to obstetric, socio-demographic, and clinical factors, and "age, gravida, the number of abortions and the venous thromboembolism risk score" variables have a significant effect on the QoL.

Keywords: Quality of Life (QoL), Pregnancy, Postpartum period, Pregnant women, EQ-5D-5L

1. INTRODUCTION

According to the United Nations, an average of 255 women give birth every minute worldwide [1], and approximately 385,000 babies (140 million per year) are born every day [2]. The puerperium period (postpartum period) (initial postpartum, early puerperium, and delayed postpartum period) covers the first 6-week period after birth, which starts with the expulsion of the placenta and ends at the end of the 6th week following birth [1, 3]. Six to 8 weeks after this period is called the "late postpartum phase," [4] and the physiological changes that occur during pregnancy and birth return to pre-pregnancy conditions [5].

The postpartum period involves various physical and mental problems [6]. Some women can be extremely sensitive to visible changes such as postpartum body shape and size changes, pregnancy scars, weight gain, and skin and hair loss, and may be affected by these changes. In addition, invisible internal changes such as postpartum depression can occur in many women [7]. In some cases, changing health conditions after childbirth can last up to 2 years after birth [6]. The most common problems in the postpartum period are infection, anemia, wounds, headache, back pain, constipation, hemorrhoids, urinary/fecal incontinence, and sexual problems [8]. Since, women have to cope with all these changes in the postpartum period, their quality of life (QoL) can be affected [9]. These postpartum health problems may lead women to take sick leave or quit their jobs due to long-term illness [10]. Changes in women's QoL in the postpartum period can affect various aspects of maternal and infant health [9, 11]. Therefore, health systems should adopt effective healthcare interventions that prevent and/or treat comorbidities and complications associated with pregnancy and postpartum disease [12].

How to cite this article: Koca GS, Celik Y, Keskin HL, Yalcin Balcik P. The factors affecting the quality of life among women during the postpartum period. Marmara Med J 2023: 36(2):182-191. doi: 10.5472/marumj.1302417

ISSN: 1309-9469

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

Women's subjective perceptions of their health-related QoL are a fundamental measure of the quality and effectiveness of maternal and child health interventions. Although, traditionally used methods for measuring the outcomes of the pregnancy and postpartum period, such as pregnancy-related morbidity and mortality rates, continue to be used as a basis, they are no longer adequate. Popular health depends on saving lives and improving the QoL [13]. Evaluation of QoL in clinical trials to investigate the effectiveness of preventive and treatment programs in pregnant and postpartum women has become increasingly important in pregnancy and postpartum periods [14].

Reliable, valid, and sensitive QoL measures are required to appropriately examine the effectiveness of interventions in pregnancy and postpartum periods. This study was conducted to compare the postpartum hospitalization process of women and the QoL post-discharge from the hospital. The study aimed to determine the differences in the QoL of women (women groups who gave birth by vaginal delivery and cesarean section) according to delivery type, the differences in obstetric, clinical, and sociodemographic factors, and those affecting the QoL of patients.

2. PATIENTS and METHODS

Study design

This descriptive and cross-sectional study used convenience sampling which is non-probabilistic. This sampling method was thought to be more appropriate since women in the postpartum period had to deal with issues such as feeding their newborns and suffering pain or stress just after birth. The women who agreed to participate in this study during the hospital pre-discharge and post-discharge in the postpartum (42 to 49 days) data collection period and were over the age of 18 were included in the sample. There were no exclusion criteria within the scope of the research. Women gave birth in a third-level hospital in July 2019 after uneventful pregnancies. Information about the women's QoL was collected by the researchers through face-to-face interviews with patients during the hospitalization period and telephone interviews between 42-49 days after the patients were dismissed from hospital. The QoL of postpartum patients was then compared based on the period when postpartum women were hospitalized for an average of 3 days and 6 weeks after delivery.

Measures

To measure the QoL of postpartum patients, the Turkish version of the EuroQoL (EQ 5D-5L) scale, was used (euroQoL .org). The Turkish version of the scale was translated into 171 languages by the EuroQoL group [15]. Although, the scale does not have a Cronbach alpha value calculated by EuroQoL, the Cronbach alpha value reported in international studies is observed as above 0.80 [16]. This scale is used in many studies in the national and international literature [17-22]. The EQ-5D-5L QoL scale is a tool to measure the EQ-5D index, which is "an index scale that evaluates the health status of patients in terms of five dimensions of health" with "five perceived health status levels per dimension" (5L). The EQ-5D index from the five scale parameters (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) with 1 to 5 for each parameter consists of the health status of the mother. The number 1 given to the questions indicates the best state of health, and the number 5 indicates the worst state of health. As a result of this method, a 1-digit number is obtained that expresses the level selected for this parameter. The digits of the five parameters are combined into a 5-digit number (for example, 11111), which describes the patient's health status. These five health status values are then converted into a weighted score used to calculate quality-adjusted life years (QALYs) ranging from zero (0) to one (1). A score of "0" represents death, and a score of "1" represents perfect health. However, during this transformation, it is important for each country to determine the transformation weight values in accordance with its sociological and cultural structure. Since, the coefficients describing the health status of each patient were not made for Turkey, they were evaluated using German values, which is one of the other countries whose coefficients were produced accordingly. There are many studies in the literature using the weights of other countries, and there are also studies using Germany's weights [23, 24]. Based on this evidence, in this study, the QALY weight values of Germany were used.

All procedures performed in the study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and ethical standards. This study was approved by the Hacettepe University Non-Invasive Clinical Research Ethics Committee (date: 19.03.2019, approval number: 2019/09-30). A written informed consent form was obtained from all participants.

Statistical Analysis

Data were analyzed using the Statistical Package for the Social Sciences (version 20.0) statistical program. Descriptive statistics are shown with numbers and percentages. The Kolmogorov-Smirnov test was used to test if the collected data showed a normal distribution pattern in order to decide on appropriate statistical tests in comparing groups. It was observed that the coefficient of variation was below 30%, the skewness and kurtosis coefficients were in the range of – 1.5 and +1.5 distribution, and the data were in accordance with the normal distribution. The results of normal distribution tests showed there was no bias against the use of parametric tests since the data was normally distributed. In addition, the differences in the QoL values according to the sociodemographic, obstetric, and clinical characteristics of the patients, the significance test of the difference between two independent groups (Student's *t*-test), the significance test between two dependent groups (paired samples t-test), and one-way variance analysis (one-way ANOVA) were used. The post-hoc LSD test was used to determine the group that made a difference between the groups in the parameters of the one-way ANOVA test. In the study of sociodemographic parameters, the patient's age, educational status, social security, and working status were used, while the average monthly income of the family, obstetrics, and clinical

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

parameters of patients' gravida, parity, number of alive children, gestational week, indication for cesarean section, the risk of venous thromboembolism, and anticoagulant drug use were used to determine the post-discharge status score. To determine the main determinants of the QoL in the study, multivariate regression analyses were performed, and the backward regression method was applied during these analyses. In the established model of multiple regression analysis, the quality-of-life score was determined as a dependent variable, and other obstetric and clinical variables were determined as independent variables. Statistical significance was set at a p value <0.05.

As a result of the analyses, the QoL of postpartum women was examined according to various sociodemographic, obstetric, and clinical characteristics of patients, according to their type of delivery, the health status parameters that determine the QoL, and various other factors (age, education level, social security, employment status, monthly income of the family, the number of gravida, the number of live births, the number of miscarriages, and VTE risk scores) affecting the QoL.

3. RESULTS

Of the 175 postpartum women whose data were analyzed, 42.9% (n=75) were aged <25 years. This rate was followed by women over the age of 30 (n=54; 30.9%) and those in the 25–30 age group (n=46; 26.3%). According to the level of education, 54.9% (n=96) of the patients consisted of those who had received an education of maximum 12 years, while 45.14% (n=79) consisted of patients who received more than 12 years of education. Of the patients, 90.9% (n=159) did not work, and 96% of the women (n=168) were registered with the Social Security Institution. In addition, 1.1% (n=2) of the women did not have any insurance and paid a fee, 2.3% (n=4) benefitted from maternity insurance, and a mother under the age of 18 was also eligible for the benefit. The average monthly income level of 56% of the women (n=98) was over 2500 ₺ (Turkish liras). When the obstetric and clinical data of the cases were examined, it was determined that 37.1% (n=65) of the mothers had their first pregnancy, and 40.6% (n=71) had their first birth. A total of 58.29% of the patients (n=102) already had at least one live birth. In 56.6% (n=99) of the patients, the delivery occurred after the 37th gestational week was completed, that is, a mature newborn. A total of 33.1% (n=58) of the births was performed by cesarean section, 47.4% (n=27) of the cesarean sections were performed in emergency, and 52.6% (n=30) of the births were performed in elective (planned) conditions. Of the patients, 12.6% (n=22) had had at least one miscarriage, and the percentage of those who underwent elective (voluntary) abortion was only 2.9% (n=5). Low molecular weight heparin (LWMH) was administered as an anticoagulant (anticoagulant drug) in 40.6% (n=71) of the cases during hospitalization in the postoperative period and in 39.4% (n=69) within 6 weeks after delivery. According to the venous thromboembolism (VTE) risk scoring, the risk score of 41.7% (n=73) of patients was 0, while the risk scores of 21.1% (n=37) were 1, 27.4% (n=48) were 2, and 9.7% (n=17) were 3 and higher. A total of 39.4% of postpartum mothers continued to use LMWH post-discharge because the VTE risk score was 2 or higher.

Comparison of the QoL scores of postpartum women

When the pre-discharge QoL scores were examined according to the sociodemographic characteristics of the cases, the difference in scores was statistically significant only according to age group (p=0.002). The QoL score was significantly higher in postpartum women under the age of 25 years (Table I). In other sociodemographic characteristics (education, social security, working status, and average monthly income of the family), the QoL scores were similar between the groups (p>0.05).

When the mean pre-discharge QoL scores according to the obstetric and clinical characteristics of the patients were examined according to the method of delivery, it was found that the QoL scores were significantly higher in cases where vaginal delivery occurred (0.835 vs. 0.794, p=0.036). QoL scores were significantly higher in the groups with a VTE risk score of 0 or 1 (p=0.039; Table I). Also, there was a difference according to the VTE scores, the mean of QoL scores those with a VTE score of 1 point is higher than the others. There was no difference in QoL scores between the groups in terms of other obstetric and clinical characteristics (p>0.05).

According to sociodemographic parameters, postpartum women's QoL scores differed significantly according to age group post-discharge (p=0.008) (Table I). As in the case of pre-discharge, it was significantly higher in the under-25 group than in the 25-30 and above 30 years. In other sociodemographic variables, the QoL scores between the groups were similar.

According to the obstetric and clinical factors shown in Table I, the QoL score averages of the patient's post-discharge according to their gravida, parity, number of miscarriages, number of livebirths, and LWMH use status differed significantly between the groups (p<0.05). The QoL score was highest in those with a first pregnancy (i.e., gravida =1), while it was significantly lower in the group with gravida ≥3 (p=0.041). The QoL score was found to be significantly higher in women with a first birth (i.e., parity=0) than in other groups of women who had previously given birth and whose child had lived (i.e., parity=1 and ≥2) (p=0.014 and 0.015, respectively). The QoL score was found to be significantly higher in women who had 0 and 1 miscarriages. The QoL score was also significantly higher in those who used LMWH, an anti-clotting drug, post-discharge (0.966 vs. 0.960; p=0.035). The mean QoL score of the patients according to the week of delivery, type of delivery, indication for cesarean section, and VTE risk scores was similar between the groups (p>0.05).

The QoL indicators obtained from the five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) that indicate the health status of postpartum mothers were compared pre-discharge and post-discharge. A statistically significant difference was found in mobility, self-care, usual activities, and pain/discomfort dimensions (p<0.005; Table II).

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

Table I. *Comparison of QoL scores pre-discharge and post-discharge according to socio-demographic, obstetric, and clinical characteristics*

	Characteristics	Groups (n=175)	QoL Score Pre-Discharge			QoL Score Post-Discharge		
			Mean ±SD	t/F	p	Mean ±SD	t/F	p
Socio-demographic	Age	<25 (n=75)	0.858 ±0.129	2.072	**0.002**	0.980 ±0.048	4.979	**0.008**
		25-30 (n=46)	0.773 ±0.205			0.941 ±0.127		
		>30 (n=54)	0.794 ±0.165			0.930 ±0.106		
	Education level	≤12 years (n=96)	0.832 ±0.164	0.555	0.580	0.948 ±0.093	0.902	0.368
		>12 years (n=79)	0.811 ±0.152			0.962 ±0.098		
	Social security	Social Security Institution (n=168)	0.824 ±0.156	0.162	0.688	0.954 ±0.097	1.145	0.286
		Other groups* (n=7)	0.799 ±0.226			0.967 ±0.054		
	Employment status	Unactive (n=159)	0.825 ±0.161	0.180	0.673	0.955 ±0.097	0.149	0.700
		Active (n=16)	0.798 ±0.136			0.945 ±0.075		
	Family's monthly income	≤2500 ₺ (n= 77)	0.811 ±0.182	0.538	0.466	0.952 ±0.096	0.331	0.566
		>2500 ₺ (n=98)	0.831 ±0.141			0.956 ±0.095		
	Someone who has attendant (responsible)	Yes (n=164)	0.829 ±0.154	1.196	0.233	0.953 ±0.097	1.055	0.468
		No (n=11)	0.766 ±0.197			0.973 ±0.062		
Obstetric	The number of gravida	1 (n=65)	0.823 ±0.128	0.008	0.992	0.964 ±0.104	7.013	**0.041**
		2 (n=54)	0.826 ±0.178			0.956 ±0.075		
		≥3 (n=56)	0.820 ±0.185			0.941 ±0.103		
	The number of parity (previous births)	0 (n=71)	0.828 ±0.128	2.185	0.120	0.965 ±0.101	4.342	**0.014**
		1 (n=62)	0.772 ±0.222			0.947 ±0.092		
		≥2 (n=42)	0.875 ±0.968			0.948 ±0.091		
	The number of miscarriages	0 (n= 153)	0.832 ±0.140	2.173	0.142	0.956 ±0.091	7.780	**0.006**
		1 (n=18)	0.823 ±0.158			0.954 ±0.095		
		≥2 (n=4)	0.762 ±0.247			0.942 ±0.122		
	The number of live births	0 (n=73)	0.820 ±0.148	1.471	0.237	0.966 ±0.100	4.314	**0.015**
		1 (n=62)	0.787 ±0.203			0.944 ±0.093		
		≥2 (n=40)	0.877 ±0.101			0.949 ±0.091		
Clinical	Gestational week	≤37th gestational week (n=76)	0.827 ±0,135	0.167	0.861	0.960 ±0.077	0.735	0.444
		>37th gestational week (n=99)	0.820 ±0,174			0.950 ±0.107		
	Delivery type	Vaginal delivery (n= 117)	0.835 ±0,150	2.119	**0.036**	0.955 ±0.106	0.852	0.396
		Caesarean delivery (n= 58)	0.794 ±0,176			0.953 ±0.071		
	Cesarean section indication	Emergency (n= 27)	0.767 ±0,183	-0.702	0.491	0.952 ±0.078	-0.047	0.963
		Elective (n= 30)	0.819 ±0,173			0.953 ±0.066		
	Use LMWH	Yes (n=71)	0.786 ±0,193	-1.440	0.157	0.966 ±0.088	-2.129	**0.035**
		No (n= 104)	0.845 ±0,131			0.960 ±0.100		
	VTE risk score	0 (n=73)	0. 835 ±0,138	2.576	**0.039**	0.962 ±0.099	1.732	0.145
		1 (n=37)	0.863 ±0,126			0.946 ±0.103		
		2 (n=48)	0.776 ±0,214			0.949 ±0.095		
		≥3 (n=17)	0.780 ±0,080			0.949 ±0.069		

p=p-value; SD=standard deviation; t=t value; F=F value, LMWH :low molecular weight heparin, VTE: venous thromboembolism
**The women did not have any insurance, paid a fee, benefited from maternity insurance, and a mother under the age of 18 who was eligible for the benefit*

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

Table III presents the comparison in the QoL scores according to the delivery types pre-discharge in cases who delivered. The results showed a statistically significant difference based on all sub-dimensions ($p<0.05$), while the mobility sub-dimension was not statistically significant ($p>0.05$). Accordingly, when compared with the cases who gave birth by cesarean section, the self-care, usual activities, pain/discomfort, and anxiety/depression scores were significantly higher both pre and post discharge ($p<0.05$). In general, the QoL scores of patients with vaginal delivery were higher. When the QoL scores of the patient's post-discharge were evaluated according to the delivery type, the mean QoL scores differed between those who delivered vaginally and those who delivered by cesarean section based on all sub-dimensions except for normal activities ($p<0.05$). Accordingly, there was a significant improvement in the QoL of patients after hospital discharge.

Determination of the effect of sociodemographics on the QoL score

According to the results of the four-stage regression analysis performed to determine the sociodemographic variables that affect the score of postpartum patients' post-discharge, the variables with a statistically significant effect on the QoL are given in Table IV.

Table II. *Comparison of women's' scores pre-discharge and post-discharge according to QoL parameters*

QoL subdimensions	Groups (n=175)	Mean ± SD	t	p
Mobility	Pre-discharge	1.88 ±0.839	8.202	**<0.001**
	Post-discharge	1.25 ±0.647		
Self-Care	Pre-discharge	1.35 ±0.780	4.391	**<0.001**
	Post-discharge	1.07 ±0.339		
Usual Activities	Pre-discharge	1.57 ±0.931	6.792	**<0.001**
	Post-discharge	1.09 ±0.384		
Pain/Discomfort	Pre-discharge	2.15 ±0.916	12.592	**<0.001**
	Post-discharge	1.24 ±0.587		
Anxiety/Depression	Pre-discharge	1.40 ±0.871	1.475	0.142
	Post-discharge	1.29 ±0.653		
Total QoL Scores	Pre-discharge	0.812 ±0.168	7.175	**<0.001**
	Post-discharge	0.916 ±0.115		

p=p-value; SD=standard deviation; t=t value. QoL: quality of life

Table III. *Comparison of pre-discharge and post-discharge QoL scores of women according to delivery types*

QoL subdimensions	Delivery types	QoL Score Pre-Discharge			QoL Score Post-Discharge		
		Mean ±SS	F	p	Mean ±SD	F	p
Mobility	Vaginal delivery	1.95 ±0.847	1.109	0.450	1.26 ±0.697	0.291	**0.015**
	Caesarean delivery	1.85 ±0.826			1.24 ±0.540		
Self-Care	Vaginal delivery	1.93 ±0.798	11.921	**<0.001**	1.08 ±0.375	0.124	**0.008**
	Caesarean delivery	1.39 ±1.074			1.07 ±0.256		
Usual Activities	Vaginal delivery	1.84 ±0.602	3.645	**<0.001**	1.09 ±0.415	0.725	0.686
	Caesarean delivery	1.30 ±0.365			1.07 ±0.317		
Pain/Discomfort	Vaginal delivery	2.36 ±0.894	1.127	**0.030**	1.24 ±0.611	0.889	**0.002**
	Caesarean delivery	2.04 ±0.931			1.24 ± 0.540		
Anxiety/Depression	Vaginal delivery	1.62 ±0.743	18.491	**0.018**	1.30 ±0.606	0.834	**0.023**
	Caesarean delivery	1.29 ±1.057			1.28 ± 0.744		
Total QoL Scores	Vaginal delivery	0.835 ± 0.151	4.310	**0.010**	0.916 ±0.121	0.144	**0.025**
	Caesarean delivery	0.766 ± 0.192			0.917 ±0.104		

p= p-value; SD=standard deviation; F=F value. QoL: quality of life

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

The established regression model was statistically significant (F=2.710; p=0.02). Accordingly, the "age" variable has a significant effect on the QoL. However, the variables of education, social security, employment status, and monthly income of the family are not significant determinants of QoL. According to age groups, the QoL scores of mothers between the ages of 25 and 30 were higher than those of mothers over the age of 30 and under the age of 25, and the total QoL score decreased as the age increased.

Determination of obstetric and clinical factors effect on the QoL score

Table V shows the variables that have a statistically significant effect on the QoL according to the results of the 5-stage regression analysis performed to determine the obstetric and clinical variables affecting the QoL score of the patients' post-discharge.

The established regression model was statistically significant (F=3.309; p=0.01). Accordingly, although the "number of live births" variable did not significantly affect the QoL, other obstetric and clinical variables had a significant effect on QoL. So, the gravida increased the QoL (p=0.02) but the number of miscarriages (p=0.026), and the venous thromboembolism risk score (p<0.001) decreased the QoL. These variables explain 7.20% of the QoL.

Table IV. *Sociodemographic parameters impacting the QoL score*

	B	Std. Error	β	t	p	
Constant	74.316	6.169		12.047	**<0.001**	
Age						
<25	**Ref.**					
25-30	-5.851	2.988	-0.159	-1.958	**0.050**	
>30	-1.221	2.870	-0.291	-3.562	**<0.001**	
Education level						
≤12 years	**Ref.**					R=0.272
>12 years	6.019	2.964	0.163	2.031	0.840	R^2=0.07
Social security						
Social Security Institution	4.924	2.244	0.059	0.789	0.431	$F_{(5, 175)}$ =2.710 (p=0.02)
Other groups*	**Ref.**					Durbin Watson=1.900
Employment status						
Active	**Ref.**					
Inactive	2.927	1.430	0.050	0.661	0.510	
Monthly income of the family						
≤2500 ₺	**Ref.**					
>2500 ₺	1.331	0.533	0.041	0.525	0.600	

Constant: constant value; B: unstandardized B coefficients; Std. Error=Standard error; β =Standard regression coefficients, t = t value; F: F value; p=p-value; Ref: Reference group; R2: R-squared value.
**The women who did not have any insurance, paid a fee, benefited from maternity insurance, and a mother under the age of 18 who was eligible for the benefit*

Table V. *Obstetric and clinical parameters with an effect on QoL score*

	B	Std. Error	β	t	p	
Constant	69.645	3.426		20.331	**<0.001**	
Number of gravida	6.461	2.754	0.471	2.246	**0.020**	R=0.269
Number of live children	-5.424	3.157	-0.298	-1.718	0.088	R^2=0.07
Number of miscarriages	-8.357	3.714	-0.230	-2.250	**0.026**	$F_{(4, 175)}$ =3.309 (p=0,01)
VTE risk scores	-3.359	1.201	-0.228	-2.796	**0.006**	Durbin Watson=1.914

VTE: venous thromboembolism, Constant: constant value; B: unstandardized B coefficients; Std. Error=Standard error; β =Standard regression coefficients, t = t value; F: F value; p=p-value; R2: R-squared value.

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

4. DISCUSSION

Childbirth has a major impact on mothers' health-related QoL. The aim of this study was to determine the factors affecting the QoL of postpartum women (patient groups who gave birth by vaginal delivery and cesarean section) and which factors make a difference and effect the QoL.

According to the analyses performed to determine the sociodemographic factors affecting the QoL, the mean QoL score of the patients differed between the period of hospitalization pre-discharge and the period after 6 weeks post-discharge. Postpartum women's QoL improved post-discharge, and their QoL scores increased. Thus, while QoL differs according to age groups pre and post discharge, QoL does not differ according to other sociodemographic factors; in this study, it has been observed that the differences seen according to age are similar to other research findings [25-26]. This finding may partly explain the high average QoL of women under 25 years of age in this study. In the same study, the effect of physical activity level and sleep quality on the QoL in pregnant women was examined, and it was found that while there was no significant relationship between inactivity seen during pregnancy and quality of life, sleep changes were associated with the QoL [25-26]. In a study conducted by Mousavi et al, on 356 pregnant women, the QoL scores of postpartum patients was examined at the level of some variables; it was concluded that age affected the QoL at the environmental level, and age had no effect on the QoL scores at the physical, mental, social, and global levels. In addition, education and income variables did not have a significant effect on the QoL of patients in any dimension [27].

According to the analyses performed to determine the clinical factors affecting the QoL, the mean QoL scores of women before and post discharge differed according to the delivery type (vaginal or cesarean delivery). One of the most important goals of antenatal and postnatal care in developed countries is to improve the QoL of the mother [28], and a study on cesarean section reported that the risk of maternal morbidity increased cases of hysterectomy, bleeding, infection, thrombosis, and postpartum depression in patients who delivered by cesarean section (intrapartum). The odds ratio for cesarean section was 2.0 (95% CI 1.6–2.5) and 2.3 (95% CI 1.7–3.1), respectively [29]. In addition, the results of some studies show that fatigue, headache, insomnia, anemia, urinary tract infection, and other conditions requiring treatment in the first 8 weeks after delivery are higher in women who gave birth by cesarean section than in those who delivered by vaginal birth. Pain and fatigue can affect the QoL after birth [30]. According to Abedian et al., in a comparison of the QoL of the patients with vaginal delivery and with cesarean delivery in Iran, the QoL scores of the cesarean section group were found to be lower than the those of the vaginal delivery group, according to the mental and physical sub-dimensions [31]. These results show that the method of birth has an effect on the QoL, and there may be a difference in the QoL score of women according to the type of birth. Another finding in this study is that the QoL of patients differs according to the VTE risk score pre-discharge, and the QoL score was found to be higher in patients with a VTE risk score of 0 or 1 than in those with a high-risk score. This difference is believed to be associated with the absence of additional risk factors such as comorbidity, obesity, preeclampsia, postpartum hemorrhage, and the risk of immobility in the postpartum period in patients with a low risk score.

Post discharge, the mean QoL score differs according to parity, gravida, number of live births and the use of anticoagulant LMWH. However, QoL scores of the patients were similar regarding the week of delivery, type of delivery, indication for cesarean section, and VTE risk scores. The difference in QoL scores according to the number of parity was determined in the patients who had given birth at least once before, and the mean QoL score of those patients was higher than that of the other groups. There are differences between patients who gave birth at least once before and those who gave birth three or more times. Park and Choi stated that reproductive history can affect women's health and QoL [32]. Most studies have evaluated the relationship between birth and QoL [33, 34]. Unlike these results, in a study conducted by Dehcheshmeh et al., it was found that parity was not associated with birth in terms of pregnancy outcomes [35]. In this study, it was observed that the difference seen according to the number of gravida existed between the patients who had three or more pregnancies and those who were pregnant at least once or twice. In a similar study, Fatemeh et al., found that the number of gravida differed significantly according to the QoL [36]. In addition, another finding in this study is that there are differences between the patients who have at least one child and those who have three or more children according to the number of livebirths. Women who have more motherhood experience and more than one child adapt to motherhood more naturally after the birth of a second child [37]. In a study investigating the factors affecting the postpartum functional status of women, it was observed that as the number of children increased, the self-care activities of the mother decreased. As the postpartum period increases, the functional status of women who receive help in baby care and housework decreases in the 6th week and the 3rd and 6th months after birth [38]. These conditions can affect the QoL of women in various ways. In this study, there were differences between the patients who used and those who did not use anticoagulant drugs according to their status. The mean QoL scores were higher in patients using anticoagulant medication. This difference found after discharge is thought to be related to the information given to the patients by their physicians about the purpose of using LMWH before they are discharged from the hospital. Women using LMWH after discharge may have felt more confident when they considered the information of their physicians, which may explain the higher QoL scores in patients using LMWH compared to the group that did not use LMWH. In addition, LMWH is an important factor in the prevention of maternal mortality due to venous thrombosis [39-41].

The postpartum period can have significant physical, emotional, and social effects on a woman's QoL. Most postpartum research has focused on physical complications, and only a few studies have specifically investigated the QoL pre and post discharge. Therefore, this study is important [30, 31, 27, 42].

http://doi.org/10.5472/marumj.1302417
Marmara Med J 2023;36(2): 182-191

In this study, the QoL scores of the patients pre and post discharge differed based on all sub-dimensions (mobility, self-care, usual activities, and pain/discomfort) except for the anxiety/depression dimension. In a study conducted by Torkan et al., on the postpartum patient group based on 6 to 8 weeks, it was concluded that the QoL differed only in physical health indicators and the QoL did not change based on other dimensions [30]. In a study by Mousavi et al., in which they examined the QoL in the cesarean and vaginal delivery groups, differences were observed in all dimensions except environmental factors, and it was concluded that the QoL scores were higher in the vaginal delivery group than in the cesarean section group [27].

In this study, the effects of various sociodemographic, obstetric, and clinical variables on QoL in postpartum women were investigated, and it was concluded that age, number of gravida, number of exaggerations, and venous thromboembolism risk score were predictors of QoL, but the effect of the number of live births on QoL was not significant. In addition, while the number of gravida positively affects the QoL, the variables of age, number of livebirths, number of exaggerations, and venous thromboembolism risk score negatively affect QoL. In Akın et al.'s study examining the QoL of postpartum women according to the sociodemographic and fertility characteristics of women, similar to the results of this study, the age variable is an important determinant of QoL [25]. In a study conducted by Calou et al., the profession, the number of parities, support from their spouse, and marital status are predictors that positively affect their QoL [43]. In a study comparing the QoL after vaginal and cesarean section, Mousavi et al., concluded that parity is a predictor of QoL [27]. In their analysis, Da Costa et al. studied the determinants of the physical health status of women in the postpartum period; the parity number of the patients showed a significant effect on the QoL, and all the variables together explained 20% of the variance [44]. De Oliveira et al., examined the QoL of mothers after birth and found that, unlike the results of this study, number of live births and parity variables did not effect QoL [42]. In this study, the gravida has a positive effect on the QoL in relation to the fact that women with previous pregnancies are more naturally compatible with motherhood. In a study by Küçükkaya et al., in which they examined the concerns of women regarding the birth and postpartum period, the increase in the gravida in pregnant women in the 1st and 2nd trimesters decreased their anxiety scores regarding depression [45].

According to the findings of this study, an increase in VTE risk scores negatively affected patients' QoL scores. Most of the factors that make up the risk score for VTE include concomitant disease or additional risk factors. This may explain the negative impact of the VTE risk factor found in this study on QoL. In addition, Erickson et al., examined the relationship between various factors and QoL in patients with venous thromboembolism and found that most of them had a QoL score below the average QoL [46]. In the same study, patients with a history of VTE had higher depression and anxiety scores.

Conclusion

In this study, the QoL of women in the postpartum period was evaluated using the EQ 5D-5L "mobility, self-care, usual activities, pain/discomfort, and anxiety/depression." To evaluate the effect of women's sociodemographic and clinical characteristics on their QoL, their quality-of-life scores were compared immediately after delivery and 6 weeks after discharge. According to the results obtained, the QoL of women differs during the period of hospitalization and within six weeks of receiving home care. When the literature is examined, most studies focus on postpartum women's ability to perform their physical activities and daily normal activities. Studies examining the QoL pre and post discharge are rare. This study is important in terms of addressing this comparison and revealing the sociodemographic and clinical factors that are important in terms of QoL. However, since this was a cross-sectional study, the results obtained from this study are limited to the sample of the study, and these findings may differ in studies with larger sample sizes. Therefore, to understand the QoL of women in the postpartum period, practitioners should consider many factors together with their various aspects. Also measuring the QoL is widely perceived to have a substantial effect, but results are partially dependent upon study methods and outcome variables of interest.

The roles and responsibilities of mothers in the care of their newborn babies create a big difference in the QoL of women in this period. Postpartum women experience a range of physical symptoms associated with QoL, such as fatigue, back pain, perineal pain, dyspareunia, hemorrhoids, urinary incontinence, and psychological changes, such as an increased risk of depressive disorders. In this sense, healthcare research needs to comprehensively define the factors affecting the QoL of postpartum women. Cognitive-behavioral interventions (including communication, problem-solving, self-disclosure, and empathetic responsiveness) healthcare providers should consider postnatal cognitive-behavioral interventions. Therefore, it can be recommended that health care providers develop comprehensive interventions to improve the QoL of women in the postpartum period. In this context, longitudinal studies are required to precisely investigate which factors may affect postpartum women's health and their experiences within the Turkey maternity system.

Compliance with Ethical Standards

Ethical Approval: This study has been approved by the Hacettepe University Non-Invasive Clinical Research Ethics Committee (date: 19.03.2019, approval number: 2019/09-30). A written informed consent form was obtained from all participants.

Conflict of Interest: The authors declare that they have no conflict of interest.

Financial Support: The authors declare that have no financial support.

Authors' Contribution: All authors contributed to the study's conception and design. GSK and YC: Material preparation, data collection and analysis, GSK: Writing the first draft of the

manuscript. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

REFERENCES

[1] Van der Woude DA, Pijnenborg JM, de Vries J. Health status and quality of life in postpartum women: a systematic review of associated factors. Eur J Obstet Gynecol Reprod Biol 2015; 185:45-2. doi: 10.1016/j.ejogrb.2014.11.041

[2] The World Counts. How many babies are born each day? Available at: https://www.theworldcounts.com/stories/how-many-babies-are-born-each-day Accessed on 04 October 2021.

[3] Güneri SE. Evidence based practices in early postpartum period. Gumushane Univ J Health Sci 2015; 4:482-6.

[4] Çevik A, Alan S. Traditional practices applied in Pospartum Periodr Mersin University School of Medicine Lokman Hekim Journal of History of Medicine and Folk Medicine 2020; 10:14-2. doi: 10.31020/mutftd.624508.

[5] World Health Organization. Postpartum care of the mother and newborn: a practical guide: report of a technical working group (No. WHO/RHT/MSM/98.3). World Health Organization; 1998.

[6] Cheng CY, Li, Q. Integrative review of research on general health status and prevalence of common physical health conditions of women after childbirth. Womens Health Issues 2008; 18:267-80. doi: 10.1016/j.whi.2008.02.004.

[7] Boybay Koyuncu S, Duman, M. Body dissatisfaction of women during postpartum period and copin strategies. Women & Health 2022; 62: 46-54. Doi:10.1080/03630.242.2021.2014019.

[8] Zainur RZ, Loh KY. Postpartum morbidity-what we can do. Med J Malaysia 2006; 61: 651-57.

[9] Hammoudeh W, Mataria A, Wick, L, et al. In search of health: quality of life among postpartum Palestinian women. Expert Rev Pharmacoecon Outcomes Res 2009; 9: 123-32.

[10] Van Beukering MDM. Work during pregnancy and postpartum period:research on sick leave. TBV 2002; 10: 2-7.

[11] Nikpour M, Abedian Z, Mokhber N, et al. Comparison of quality of life in women after vaginal delivery and cesarean section. J Babol Univ Medical Sci 2011; 13: 44-50.

[12] World Health Organization. Reshaping health systems towards health outcomes: report on a WHO meeting, Celle, Germany 17-19 December 1997 (No. EUR/ICP/POLC 02 02 04 (A)). Copenhagen: WHO Regional Office for Europe; 1999.

[13] The World Development Report. World development report 1993-Investing in Health. Commun Dis Rep CDR Wkly 1993; 3 (30):137. https://pubmed.ncbi.nlm.nih.gov/7693199/. Accessed 26 September 2021.

[14] Higginson IJ, Carr AJ. Using quality of life measures in the clinical setting. BMJ 2001; 322: 1297-300. doi: 10.1136/bmj.322.7297.1297.

[15] The EuroQOL Group. EUROQOL instruments. Available at: https://euroqol.org/eq-5d-instruments/eq-5d-5l-about/ Accessed 26 April 2022.

[16] van Reenen M, Janssen B. EQ-5D-5L user guide: basic information on how to use the EQ-5D-5L instrument. Version 2.1. EuroQol Research Foundation; 2015.

[17] Huang W, Yang J, Liu Y, et al. Assessing health-related quality of life of patients with colorectal cancer using EQ-5D-5L: a cross-sectional study in Heilongjiang of China. BMJ Open 2018; 8: e022711.

[18] Poder TG, Wang L, Carrier N. EQ-5D-5L and SF-6Dv2 utility scores in people living with chronic low back pain: a survey from Quebec. BMJ Open 2020; 10: e035722.

[19] Poder TG, Carrier N. Predicting EQ-5D-5L utility scores from the Oswestry Disability Index and Roland-Morris Disability Questionnaire for low back pain. J Pain Res 2020; 13: 623.

[20] Pérez-Maná L, Cardona G, Pardo-Cladellas Y, et al. Validation of the spanish version of the low vision quality of life questionnaire. J Optom 2021:1-11.

[21] Akarsu G, Bayrakdar A, Karaman M, Zorba E, Yaman M, Yıldırım Y. HEALTH status of women exercising regularly according to EQ-5D-5L. Journal of Sport for All and Recreation 2019; 1: 11-9.

[22] Özyılmaz E, Kuşçu ÖÖ, Karakoç E, et al. Worse pre-admission quality of life is a strong predictor of mortality in critically ill patients. Turk J Phys Med Rehab 2022; 68:19-9.

[23] Saygılı, M. An evaluation of three different palliative care service models in terms of patients with cancer diagnosis-their family caregivers and cost-effectiveness analysis, PhD Thesis, Hacettepe University Institute of Social Sciences, Department of Health Management, Ankara; 2016.

[24] Tugay Yangı, D. Evaluation of cost effectiveness of standard combined therapy and supplemental combined treatment use of omalizumab in asthmatic patients adults in four different hospitals in Ankara. PhD Thesis, Hacettepe University Institute of Social Sciences, Department of Health Management, Ankara; 2022.

[25] Akın B, Ege E, Koçoglu D, Demirören N, Yılmaz S. Quality of life and related factors in women, aged 15–49 in the 12-month post-partum period in Turkey. J Obstet Gynaecol Res 2009; 35: 86-3. doi: 10.1111/j.1447-0756.2008.00870.x.

[26] Prick BW, Bijlenga D, Jansen AG, et al. Determinants of health-related quality of life in the postpartum period after obstetric complications. Eur J Obstet Gynecol Reprod Biol 2015; 185: 88-5. doi: 10.1016/j.ejogrb.2014.11.038.

[27] Mousavi, SA, Mortazavi F, Chaman, R, et al. Quality of life after cesarean and vaginal delivery. Oman Med J 2013; 28: 245. doi: 10.5001/omj.2013.70.

[28] Symon A. A review of mothers' prenatal and postnatal quality of life. Health Qual Life Outcomes 2003; 1: 1-8. doi: 10.1186/1477-7525-1-38.

[29] Villar J, Carroli G, Zavaleta N, et al. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. BMJ 2007; 335: 1025. doi: 10.1136/bmj.39363.706956.55.

[30] Torkan B, Parsay S, Lamyian M, et al. Postnatal quality of life in women after normal vaginal delivery and caesarean

section. BMC Pregnancy Childbirth 2009; 9: 1-7. doi: 10.1186/1471-2393-9-4.

[31] Abedian Z, Nikpour M, Mokhber N, et al. Evaluation of relationship between delivery mode and postpartum quality of life. Iranian J Obstet Gynecol Infertility 2010; 13: 47-3.

[32] Park S, Choi NK. The relationships between timing of first childbirth, parity, and health-related quality of life. Qual Life Res 2018; 27: 937-3. doi: 10.1007/s11136.017.1770-7.

[33] Li WY, Liabsuetrakul T, Stray-Pedersen, B, et al. The effects of mode of delivery and time since birth on chronic pelvic pain and health-related quality of life. Int J Gynecol Obstet 2014; 124: 139-2. doi: 10.1016/j.ijgo.2013.07.029.

[34] Carlander AKK, Andolf E, Edman G, et al. Health-related quality of life five years after birth of the first child. Sex Reprod Health 2015; 6: 101-7. doi: 10.1016/j.srhc.2015.01.005.

[35] Dehcheshmeh FS, Salehian T, Parvin N. The effect of spouses' educational classes held for primiparous women referring to Hajar hospital on their quality of life and pregnancy outcomes. Iran Nurs Midwifery Res 2014; 19: S59-S3.

[36] Fatemeh A, Azam B, Nahid M. Quality of life in pregnant women results of a study from Kashan, Iran. Pak J Med Sci 2010; 26 :692-7.

[37] Pawluski JL, Galea LAM. Reproductive experience alters hippocampal neurogenesis during the postpartum period in the dam. Neuroscience 2007; 149: 53-7. doi: 10.1016/j.neuroscience.2007.07.031.

[38] Şanlı Y, Öncel S. Evaluation of the functional status of woman after childbirth and effective factors. J Turk Soc Obstet Gynecol 2014; 2:105-14.

[39] Blondon M. Thromboprophylaxis after cesarean section: decision analysis. Thromb Res 2011; 127: S9-S2. doi: 10.1016/S0049-3848(11)70004-4.

[40] Bain E, Wilson A, Tooher R et al. Prophylaxis for venous thromboembolic disease in pregnancy and the early postnatal period. Cochrane Database Syst Rev 2014; 2: 1-75. doi: 10.1002/14651858.CD001689.pub3.

[41] Péret FJA, de Paula LB. VTE prophylaxis in cesarean section. Current Topics in Caesarean Section, IntechOpen; 2021, 55.

[42] De Oliveira MF, Parker L, Ahn H, et al. Maternal predictors for quality of life during the postpartum in Brazilian mothers. Health 2015; 7: 371. doi: 10.4236/health.2015.73042.

[43] Calou CGP, de Oliveira MF, Carvalho FHC, et al. Maternal predictors related to quality of life in pregnant women in the Northeast of Brazil. Health Qual Life Outcomes 2018; 16: 1-10. doi: 10.1186/s12955.018.0917-8.

[44] Da Costa, D, Dritsa M, Rippen, N, et al. Health-related quality of life in postpartum depressed women. Arch Womens Ment Health 2006; 9: 95-2 doi: 10.1007/s00737.005.0108-6.

[45] Küçükkaya B, Dindar İ, Erçel Ö, et al. Anxieties of pregnant women related to delivery and postpartum period during gestational periods. JAREN 2018; 4: 28-6. doi: 10.5222/jaren.2018.028.

[46] Erickson RM, Feehan M, Munger MA, et al. Understanding factors associated with quality of life in patients with venous thromboembolism. Thromb Haemost 2019; 119: 1869-6.