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Health quality standards evaluation of quality indicators of maternity services

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Abstract

Indicators are used by health institutions to monitor the quality of maternity services and to determine the level of quality of care. The aim of this study was to examine the level of meeting the quality indicators of maternity services monitored in a training and research hospital and to analyze the results. This study was planned as a single-centre, retrospective, descriptive study The quality indicators of maternity services monitored by the quality unit of our hospital in 2021-2022 were included in the study. Primary cesarean section rate was 19.4% (2021), 21.3% (2022), cesarean section rate in women giving birth for the first time with low risk was 30.3% (2021), 32.5%, rate of venous thromboembolism prophylaxis after vaginal delivery according to risk level was 83.1% (2021), 92.5% (2022), rate of venous thromboembolism prophylaxis after vaginal delivery according to risk level was 8.9%, (2021), 7.2% (2022), the rate of use of safe birth control list was 12.6% (2021), 19.8% (2022), the rate of mother-infant pairs who had skin-to-skin contact within the first hour after birth was 88.6% (2021), 93.8% (2022), the rate of infants discharged with only breast milk was 85.7% (2021), 88.8% (2022), the rate of postnatal mothers being evaluated for depression risk was 95.7% (2021), 14.7% (2022). It has been determined that the quality indicators monitored within the scope of birth services in our hospital are monitored and necessary improvement activities are carried out in cases where target values aren't reached. It is thought that indicator management is very important in increasing the quality of care of the complex birth process and preventing complications during the birth process.

Keywords: Health care quality, birth services, indicator management

Introduction

Measurement and evaluation of health care quality of care is an important part of the health care system. Institute of Medicine defines the quality of health care as "the degree to which health care services for individuals and communities increase the likelihood of desired health outcomes and care consistent with current professional knowledge" [1]. A number of indicators are used to determine the level of health care quality. These indicators are very important for the development of health services. Quality indicators are defined as "measurement tools that can be used to monitor, evaluate and improve the quality of patient care, organisation and support services that affect patient outcomes" [2]. The indicators monitored for the evaluation and improvement of the processes carried out in all areas of health institutions enable us to obtain short-term results. Today, it is inevitable to implement a quality system based on monitoring and analysing indicators to ensure service quality and patient safety [3]. Donabedian's study explains the relationship between structure, process and outcome-oriented care qualities in evaluating the quality of health care [4]. In 2005, standards including all processes of health services were published and documentation of service processes was started. In our country, studies on the quality system in health are carried out within the scope of the "Regulation on the Development and Evaluation of Quality in Health" published on 27.06.2015. In this process, the standards supported by regulations and directives have been reorganised many times from past to present [5]. In Türkiye, it is mandatory for all hospitals to follow department-based indicators in line with the guidelines published by the Ministry of Health for quality standards. Within the department-based indicators, nine indicators belonging to maternity services are defined and monitored by all hospitals [6].

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The labour and postnatal period is extremely important for both maternal and newborn health. Effective and quality care to prevent and manage complications in this critical period has a significant impact on reducing maternal mortality, stillbirths and early neonatal mortality. Especially in recent years, the quality of obstetric care has started to be measured for many reasons. Healthcare organisations need to monitor and measure the quality of obstetric services [7]. When the literature is analysed, some indicators for measuring the quality of maternity services are observed. Some of these indicators are; use of induction of labour, rate of instrumental vaginal delivery, caesarean section rate, vaginal delivery after caesarean section, surgical repair of the perineum in primiparous women with large perinatal tears, antibiotic prophylaxis during caesarean section, postpartum haemorrhage/blood transfusion [8], The rate of antenatal care visits where blood pressure is measured, the rate of skin-to-skin contact, the rate of initiation of breastfeeding in the first hour [9], the incidence of episiotomy, the rate of appropriate deep vein thrombosis (DVT) prophylaxis in women who give birth by caesarean section, the rate of postnatal intensive care hospitalisation, and the rate of appropriate use of corticosteroids in the antenatal period [1].

In our country, the set of quality standards in health (QSH-Hospital-Version 6) was updated by the Ministry of Health on 14.03.2020 and the indicators of maternity services are included among the department-based indicators. By monitoring the department-based indicators, it is aimed to improve the service quality by monitoring the service processes carried out for the relevant department and the outputs obtained as a result of these services with concrete data. The indicator results determined within the scope of quality standards in health are analysed by quality management units in hospitals and discussed as an agenda in committees and service delivery meetings involving hospital management and employees. Indicator results reflect the quality of care and enable the quality of health care and the adequacy of nursing services to be questioned [10].

Although it is possible to measure the dimensions of quality, the transformation of obstetric quality measurements into clinical improvements largely depends on how they are applied. It is important that the indicators are used to evaluate the care provided, to improve the quality of care and to define the strategies necessary to achieve the goals [3].

The aim of this study was to investigate the level of fulfilment of the quality indicators of obstetric services and the results in a training and research hospital.

Material and Methods

This study was planned as a single-centre, retrospective and descriptive study. The quality indicators of maternity services monitored by the quality unit of our hospital in 2021-2022 were included in the study. These indicators are included in the "Indicator Management Guide" published by the Ministry of Health. In this guide, a total of 9 indicators for maternity services processes are monitored and presented in Table 1. The population of the study consists of 9 indicators of delivery services followed by Antalya Training and Research Hospital. In the study, all indicators of maternity services included in the indicator management guide were included and no exclusion criteria were determined. The formulas in the indicator management guide were used to analyze the indicators in the study. The calculation formulas are given in detail in Table 1. The data of the indicators are submitted to the quality unit on a monthly basis by the indicator responsible through the data collection form and calculated by the quality unit and any deviation from the target value is evaluated. These indicators are used to measure the quality of maternal and newborn care and to achieve optimal healthcare outcomes. In the calculation method, the calculation methods in the published guidelines were used [6].

Table 1. Ministry of Health maternity services quality indicators

Indicator name	Calculation method
1. Primary cesarean section rate	Primary cesarean sections within the denominator/Total number of deliveries x 100
2. Cesarean section rate in low-risk first-time women	Number of women who underwent cesarean section among women in the denominator/Total number of women with low risk for cesarean section who gave birth for the first time x 100
3. Venous after cesarean section according to risk level thromboembolism (vte) prophylaxis application rate	Prophylaxis after cesarean section among patients in the denominator/total number of patients at risk for VTE who underwent cesarean section x 100
4. Vaginal postpartum venous by risk level thromboembolism (vte) prophylaxis application rate	Prophylaxis after vaginal delivery among patients in the denominator/Total number of patients at risk for VTE who had vaginal delivery x 100
5. Obstetric trauma rate in vaginal births	(Obstetrics in vaginal deliveries in the denominator) Number of trauma patients/Total number of vaginal deliveries x 100
6. Safe birth control list usage rate	Number of patients in the denominator whose safe birth control list was used properly/Total number of patients who gave birth x 100
7. The ratio of mother-infant pairs in skin-to-skin contact in the first hour after birth	Number of mother-infant pairs who underwent skin-to-skin contact in the first hour after birth from the babies in the denominator/Number of babies born alive in the hospital x 100
8. Proportion of babies discharged with exclusively breastmilk	Number of babies in the denominator who received only breast milk during hospitalization/Number of babies discharged x 100
9. Rate of evaluation of postpartum mothers in terms of depression risk	Number of mothers in the denominator evaluated in terms of depression risk/Number of postpartum mothers who applied to the hospital within 7-42 days after birth x 100

Statistical Analysis

All data were analyzed using IBM SPSS Statistics for Windows, Version 23.0 (IBM Corp., Armonk, NY). Continuous data were presented as mean±standard deviation (SD) and range (min-max). The results of categorical data were expressed as frequency (n) and percentage (%).

Ethical considerations

In this study, scientific, ethical and citation rules were followed, no falsification was made on the collected data, no ethics committee decision was taken because a ready-made data set was used, and only written permission was obtained from the hospital administration. Patient data were not used in this study. The data collection process was performed in accordance with the rules of Declaration of Helsinki. This research was planned as a cross-sectional and descriptive study.

Results

In this study, the level of fulfilment of the indicators of maternity services monitored by a training and research hospital and the indicator results were determined. Indicator results were monitored in quarterly periods and annual rates were given. The results of the maternity indicators monitored in 2021 and 2022 are presented in Table 2 and Table 3.

Table 2. Maternity services indicator results (2021)

Parameters		Periods				
		1st term	2nd term	3rd term	4th term	Annual
1. Primary cesarean rate Target value 20%↓	Total number of births	1036	1030	1234	1162	4462
	Total number of cesarean sections	528	562	642	638	2370
	Number of primary cesarean sections	246	219	223	178	866
	Number of secondary cesarean sections	282	343	419	422	1466
	Normal number of births	508	468	592	524	2092
	Primary Cesarean rate %	**23.7**	**21.3**	**18.1**	**15.3**	**19.4**
	Primary cesarean section rate among cesarean section operations %	46.6	39.0	34.7	27.9	36.5
2. Cesarean rate in low-risk first birth women Target value 40%↓	Number of women with low risk for cesarean section who gave their first birth by cesarean section	86	56	90	66	298
	Total number of first-time women at low risk for cesarean section	224	214	296	248	982
	Cesarean section rate in low-risk first-born women	**38.4**	**26.2**	**30.4**	**26.6**	**30.3**
3. Venous after cesarean section according to risk level VTE prophylaxis application rate Target value 60%↑	Number of patients who received VTE prophylaxis after cesarean section	339	436	307	509	1591
	Total number of patients at risk for VTE who underwent cesarean section	384	461	514	555	1914
	Venous post-cesarean section according to risk level thromboembolism (TVE) prophylaxis application rate	**88.3**	**94.6**	**59.7**	**91.7**	**83.1**
4. Vaginal postpartum venous by risk level VTE prophylaxis application rate Target value 10%↑	Number of patients who received VTE prophylaxis after vaginal delivery	21	10	4	12	47
	risk for VTE and vaginal delivery	140	109	150	127	526
	Venous post-vaginal delivery according to risk level rate of thromboembolism (VTE) prophylaxis	**15.0**	**9.2**	**2.7**	**9.4**	**8.9**
5. Safe birth control list usage rate Target value 15%↑	Number of incompletely filled safe birth control lists	920	900	1010	1070	3900
	who gave birth and used the safe birth control list properly	116	130	224	92	562
	Total number of patients giving birth	1036	1030	1234	1162	4462
	Safe birth control list usage rate	**11.2**	**12.6**	**18.2**	**7.9**	**12.6**
	Proportion of patients whose safe birth control list is not filled properly	88.8	87.4	81.8	92.1	87.4
6. The ratio of mother-infant pairs in skin-to-skin contact in the first hour after birth Target value 75%↑	Number of mothers-infant farmers who applied skin-to-skin contact in the first hour after birth in the hospital	973	811	1048	1084	3916
	Number of babies born alive in hospital	1033	1032	1213	1144	4422
	-to-skin contact within the first hour after birth	**94.2**	**78.6**	**86.4**	**94.8**	**88.6**
7. Proportion of babies discharged with exclusively breastmilk Target value 70%↑	Number of infants in the denominator who received only breast milk during hospitalization	834	869	1047	991	3741
	Number of babies discharged	961	1018	1222	1162	4363
	Proportion of infants discharged from breast milk only	**86.8**	**85.4**	**85.7**	**85.3**	**85.7**
8. Rate of evaluation of postpartum mothers in terms of depression risk Target value 85%↑	birth to depression risk assessment in the first 40 days after birth	998	994	1170	1107	4269
	Total number of births	1036	1030	1234	1162	4462
	Evaluation rate of postpartum mothers in terms of depression risk	**96.3**	**96.5**	**94.8**	**95.3**	**95.7**

Table 3. Birth services indicator results (Year 2022)

Parameters 2022		Periods				
		1st term	2nd term	3rd term	4th term	Annual
1. Primary cesarean rate **Target value 20%↓**	Total number of births	1067	986	1122	1114	4289
	Total number of cesarean sections	605	592	650	667	2514
	Number of primary cesarean sections	212	204	200	297	913
	Number of secondary cesarean sections	393	388	450	370	1601
	Normal number of births	462	394	472	447	1775
	Primary cesarean rate %	**19.9**	**20.7**	**17.8**	**26.7**	**21.3**
	Primary cesarean section rate among cesarean section operations %	35.0	34.5	30.8	44.5	36.3
2. Cesarean rate in low-risk first birth women **Target value 20%↓**	Number of women with low risk for cesarean section who gave their first birth by cesarean section	98	67	68	76	309
	Total number of first-time women at low risk for cesarean section	311	211	233	197	952
	Cesarean section rate in low-risk first-born women	**31.5**	**31.8**	**29.2**	**38.6**	**32.5**
3. Venous after cesarean section according to risk level VTE prophylaxis application rate **Target value 70%↑**	Number of patients who received VTE prophylaxis after cesarean section	458	379	394	550	1781
	Total number of patients at risk for VTE who underwent cesarean section	505	425	429	566	1925
	Rate of VTE prophylaxis after cesarean section by risk level	**90.7**	**89.2**	**91.8**	**97.2**	**92.5**
4. Vaginal postpartum venous by risk level VTE prophylaxis application rate **Target value 10%↑**	Number of patients who received VTE prophylaxis after vaginal delivery	3	4	3	7	17
	Risk for VTE and vaginal delivery	42	71	64	58	235
	Rate of VTE prophylaxis after vaginal delivery by risk level	**7.1**	**5.6**	**4.7**	**12.1**	**7.2**
5. Safe birth control list usage rate **Target value 20%↑**	Number of incompletely filled safe birth control lists	109	166	322	254	851
	who gave birth and used the safe birth control list properly	1067	986	1122	1114	4289
	Total number of patients giving birth	958	820	800	860	3438
	Safe birth control list usage rate	**10.2**	**16.8**	**28.7**	**22.8**	**19.8**
	Proportion of patients whose safe birth control list is not filled properly	89.8	83.2	71.3	77.2	80.2
6. The ratio of mother-infant pairs in skin-to-skin contact in the first hour after birth **Target value 75%↑**	Number of mothers-infant farmers who applied skin-to-skin contact in the first hour after birth in the hospital	1013	902	1039	2954	5908
	Number of babies born alive in hospital	1063	982	1104	3149	6298
	-to-skin contact within the first hour after birth	**95.3**	**91.9**	**94.1**	**93.8**	**93.8**
7. Proportion of babies discharged with exclusively breastmilk **Target value 70%↑**	Number of infants in the denominator who received only breast milk during hospitalization	759	808	1121	1116	3804
	Number of babies discharged	1070	979	1121	1116	4286
	Proportion of babies discharged with exclusive breast milk	**70.9**	**82.5**	**100.0**	**100.0**	**88.8**
8. Rate of evaluation of postpartum mothers in terms of depression risk **Target value 85%↑**	birth to depression risk assessment in the first 40 days after birth	12	18	32	39	89
	Total number of births	123	130	261	215	606
	Evaluation rate of postpartum mothers in terms of depression risk	**9.8**	**13.8**	**12.3**	**18.1**	**14.7**

In 2021, the primary caesarean section rate was 19.4%. The primary caesarean section rate was highest in the 1st period (23.7%) and lowest in the 4th period (15.3%). The annual caesarean section rate was 30.3% in women who gave first birth with low risk, with the highest rate in the 1st period (38.4%) and the lowest rate in the 2nd period (26.2%). The rate of venous VTE prophylaxis after caesarean section according to risk level was 83.1%, highest in the 2nd period (94.6%) and lowest in the 3rd period (59.7%). The rate of VTE prophylaxis after vaginal delivery according to risk level was 8.9%, the highest in the 1st period (15%) and the lowest in the 3rd period (2.7%). The rate of use of safe birth control list was 12.6%, the highest in the 3rd period (18.2%) and the lowest in the 4th period (7.9%). The proportion of mother-infant pairs who had skin-to-skin contact within the first hour after birth was 88.6%, highest in the 4th period (94.8%) and lowest in the 2nd period (78.6%). The proportion of infants discharged with exclusive breastfeeding was 85.7%, highest in the 1st period (86.8%) and lowest in the 4th period (85.3%). The rate of evaluation of postnatal mothers in terms of depression risk was 95.7%, with the highest rate in the 2nd period (96.5%) and the lowest rate in the 3rd period (94.8%) (Table 2).

In 2022, the primary caesarean section rate is 21.3%. The highest primary caesarean section rate was 26.7% in the 4th period and the lowest was 17.8% in the 3rd period. The rate of caesarean section in women who gave first birth with low risk was 32.5% per year, with the highest rate in the 4th period (38.6%) and the lowest rate in the 3rd period (29.2%). The rate of VTE prophylaxis after caesarean section according to risk level was 92.5%, highest in the 4th period (97.2%) and lowest in the 2nd period (89.2%). The rate of VTE prophylaxis after vaginal delivery according to risk level was 7.2%, the highest in the 4th period (12.1%) and the lowest in the 3rd period (4.7%). The rate of use of safe contraception list was 19.8%, highest in the 3rd period (28.7%) and lowest in the 1st period (10.2%). The proportion of mother-infant pairs who had skin-to-skin contact within the first hour after birth was 93.8%, highest in the 1st period (95.3%) and lowest in the 2nd period (91.9%). The proportion of infants discharged with exclusive breastfeeding was 88.8%, with a 100% rate in the 3rd and 4th periods and the lowest rate in the 1st period (70.8%). The rate of evaluation of postnatal mothers in terms of depression risk was 14.7%, highest in the 4th period

(18.1%) and lowest in the 1st period (9.8%) (Table 3).

Table 4 presents the results and target values of the maternity services indicators for 2021 and 2022. While the target value for the primary caesarean section rate was reached in 2021, the target value was exceeded in 2022. The target value was exceeded in 2022 (32.5%) in the rate of caesarean section in women with low-risk first delivery. The target value was reached in both years in the rate of VTE prophylaxis after caesarean section according to risk level. The target value was not reached in both years in the rate of VTE prophylaxis after vaginal delivery according to risk level. The target value was not reached in both years in the indicator of the rate of use of safe birth control list. The proportion of mother-infant pairs who had skin-to-skin contact within the first 1 hour after birth was 88.6% in 2021 and 93.8% in 2022, reaching the target value. The proportion of infants discharged exclusively breastfed was above 85% in both years. While the rate of evaluation of postnatal mothers in terms of depression risk was 95.7% in 2021, it was found to be quite low (14.7%) in 2022. Obstetric trauma in vaginal deliveries did not occur in both years.

Table 4. Maternity services indicators compliance with target values chart

Indicators / Ratio	2021 %	2021 target value %	2022 %	2022 target value %
1.Primary cesarean rate	19.4	20↓	21.3	20↓
2.Cesarean rate in low-risk first birth women	30.3	40↓	32.5	20↓
3. Venous after cesarean section by risk level VTE prophylaxis application rate	83.1	60↑	92.5	70↑
4. Vaginal postpartum venous by risk level VTE prophylaxis application rate	8.9	10↑	7.2	10↑
5. Safe birth control list usage rate	12.6	15↑	19.8	20↑
6. Proportion of mother-infant pairs in skin-to-skin contact in the first hour after birth	88.6	75↑	93.8	80↑
7. Proportion of babies discharged with exclusive breast milk	85.7	70↑	88.8	80↑
8. Evaluation rate of postpartum mothers in terms of depression risk	95.7	85↑	14.7	85↑
9. Obstetric trauma rate in vaginal births	0	1↓	0	1↓

The reasons for caesarean section are presented in Figure 1. When the indications for caesarean section were analysed, fetal distress, fetal macrosomia and head-pelvis incompatibility were in the top three in both years, respectively.
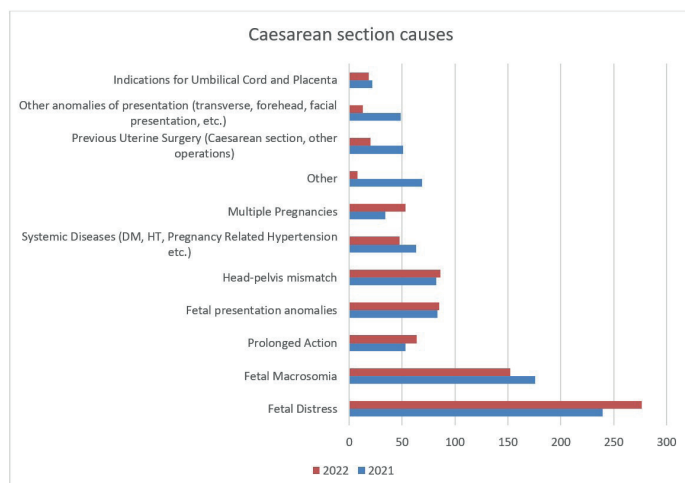

Figure 1. Distribution of caesarean section reasons

Discussion

This study provided an opportunity to make a quick assessment of the level of fulfilment and results of the quality indicators of maternity services monitored in a training and research hospital. These indicators actually show how close a hospital is to quality health service provision in maternity services. A target value was set by the hospital for maternity services indicators and the degree of achievement of this target value was monitored.

The quality of maternity services is monitored through various indicators. Maternal and child health has been considered as a priority public health problem for many years. Since the 1990s, policy makers have taken important initiatives to reduce morbidity and mortality rates of mothers and newborns [2]. In a study examining 15 (6 maternal, 5 neonatal and 4 general indicators) maternal and neonatal health care quality indicators recommended by the World Health Organization in low- and middle-income countries, it was stated that while some of the recommended indicators are already applicable, other indicators need to be improved or additional data collection sources and

methods will be needed [11]. In the study, indicators such as early skin-to-skin contact between mothers and infants, early breastfeeding and exclusive breastfeeding rate during hospitalisation, neonatal asphyxia/severe neonatal asphyxia and incidence of postpartum haemorrhage after vaginal delivery were used [12].

In our country, maternity services indicators published by the Ministry of Health are monitored. One of the indicators monitored is the primary caesarean section rate. Caesarean section is a surgical procedure medically indicated to prevent maternal and newborn deaths during labour [11]. The World Health Organisation considers 10-15% as the ideal caesarean section rate [13]. In our country, primary caesarean section rate is monitored as an indicator in contracted manager performance [14]. When the literature is examined, there are studies with different rates of primary caesarean section rate. In a study conducted in Brazil, 55.8% of the births between 2014 and 2017 were caesarean sections [11]. In some studies, the primary caesarean section rate was reported as 23.6% to 27.4% [15], 25.3% [16], 31.8% [17], 26% [18], 26.76% [19]. The caesarean section rate in Türkiye, which was 21.2% according to the 2003 Turkish Demographic and Health Survey (TDHS), was 36.7% in the 2008 TDHS. The caesarean section rate targeted by the World Health Organisation, taking into account maternal and perinatal mortality rates, is 15% [20], 57.3% of all births in Türkiye in 2020 were caesarean sections and 28.8% were primary caesarean sections. In 2021, the rate of caesarean section in live births in Türkiye is 58.4% and the rate of primary caesarean section in live births is 29.1% [21]. The increase in caesarean section in the last few years has coincided with a decline in operative vaginal deliveries. In the United States, operative vaginal delivery rates declined from 9.4% in 1995 to 3.1% of all births in 2015, while caesarean section rates increased from 20.8% to 32.0% [22]. In Canada, operative vaginal delivery rates followed the same downward trend from 16.8% of all vaginal deliveries in 1995 to 13.2% in 2014, while caesarean section rates increased from 17.6% to 27.3% of all deliveries [23]. In our study, the primary caesarean section rates were 19.4% (2021) and 21.3% (2022). Considering the results, it was found that the target value was not reached, but the rates were compatible with the literature. The reasons for caesarean section in our study included fetal distress, fetal macrosomia and head-pelvis mismatch and were due to necessity.

Complications from caesarean section are three times higher than vaginal deliveries, and caesarean sections can create increased risks in subsequent pregnancies [17]. "Healthy People 2020", the United States' federal prevention agenda to build a healthier nation, has set a goal of reducing caesarean section rates for first births for low-risk women to 24.7% or less [24]. WHO recommends caesarean section in cases of medical necessity, and although it does not recommend a clear rate, it has associated an increase in caesarean section rates of up to 10% with a reduction in maternal and neonatal mortality. Accordingly, a declining

caesarean section rate has become an indicator of quality health care in many developed countries. National health policies may influence the measurement results of such indicators [15]. In our study, the caesarean section rate in women with low risk was 30.3% (2020) and 32.5% (2021). our results are higher than the rates recommended by WHO.

VTE is one of the leading causes of maternal mortality. The rates of VTE during pregnancy and in the postnatal period have not decreased over the last two decades, and pregnancy-associated VTE continues to be a major health problem. Changing physiological and anatomical mechanisms, including decreased venous blood flow from the lower extremities as pregnancy progresses, are the cause. Caesarean section is associated with the risk of VTE. Anticoagulation is the mainstay of treatment of acute VTE during pregnancy and after delivery. The preferred anticoagulation is heparin, preferably low molecular weight heparin [24]. VTE in pregnancy usually occurs in the lower extremities, with a 70-80% predisposition for the left leg. VTE may occur at a rate of 5.4 to 7.2 per 10,000 antenatal and 4.3 per 10,000 postnatal. Low molecular weight heparin is the preferred pharmacological agent over unfractionated heparin in the treatment of venous thromboembolism in pregnancy [25]. It is known that the risk of VTE in pregnancy is approximately 5 times higher than in non-pregnant women and 30-60 times higher after delivery [20]. In addition, VTE can occur at any time during the antenatal period and 50% of the events occur in the first 15 weeks, this rate doubles with age over 35 years and also with operative delivery [26]. In our study, the rate of VTE prophylaxis after caesarean section according to risk level was found to be 83.1% (2020) and 92.5% (2021).

Postpartum depression (PPD) is a major depressive disorder that meets criteria for a depressive episode during pregnancy or during the first year after birth. Symptoms include difficulty sleeping even when the baby is asleep, fear of being alone or leaving home, impaired infant bonding, feelings of worthlessness, isolation from close family or friends, unexplained irritability, thoughts of harming oneself or the baby, and difficulty concentrating or focusing. In a study investigating PPD, 73.1% had PPD and 63.2% were referred to mental health and diseases [27,28], according to a cohort study (2005) with 5252 participants, 5.5% suffered from postpartum depression four months after birth [29], in a recent meta-analysis including 565 studies from 80 different countries or regions, the global incidence of PPD was approximately 17.2% [25], and 13.4% were accompanied by PPD [30]. In our study, the rate of evaluation of postpartum mothers for depression risk was 95.7% (2020) and 14.7% (2021). Especially in 2021, the PPD evaluation rate is quite low.

The most important reason for this is that the calculation method has changed in the indicator management guide. In 2021, the calculation method was calculated using the formula (Number of mothers in the denominator who were evaluated for depression risk within the first 40 days after birth / Total number of births) x 100 and the "Edinburgh Postpartum Depression Scale" was used

to evaluate the risk of postpartum depression of mothers and as a result of the studies carried out, the limit value of the scale for Türkiye was calculated as 12. Mothers with a value of 12 and above underwent psychiatric examination and calculations were made in line with this explanation. In 2022, the result is low because the calculation was made using the formula (Number of mothers in the denominator who were evaluated for depression risk / Number of postpartum mothers admitted to hospital within 7-42 days after delivery) x 100 in the relevant period. In this context, necessary improvement works have been initiated in the hospital information management system (HIMS) in order to calculate the relevant indicator rate correctly. Studies have been initiated to integrate the scale used into the HIMS and to evaluate the risk of depression of mothers in the first 7-42 days in the postpartum period (postpartum) with the Edinburg Pospartum Depression Scale and to send consultation to the psychiatry clinic for those who score 12 and above. When the mother reapplies to the hospital between 7-42 days after giving birth, the Edinburg Postpartum Depression Scale is displayed on the screen as a mandatory step, but the marking is made only on two buttons as "0-11 Points Low Risk" and "12 and Above Points High Risk", and if she marks high risk, an arrangement in the form of a warning in the form of "Request Psychiatry Consultation" will ensure that the necessary data is provided.

Another indicator monitored in our country is the obstetric trauma rate in vaginal deliveries. The use of forceps, vacuum or other devices for vaginal delivery has been recommended to reduce the high rate of caesarean section. The obstetric trauma rate in women who have given birth is 2.7% [23], Obstetric trauma is a major concern for women as it is associated with an increased risk of pelvic floor disorders such as anal sphincter injury, anal incontinence, urinary incontinence, pelvic organ prolapse and sexual dysfunction [31]. In our study, no obstetric trauma occurred in both years.

Skin-to-skin contact is an important indicator in improving the quality of intrapartum care3. Breastfeeding is not only feeding the baby but also an important process for the foundations of secure emotional attachment by creating the first skin-to-skin contact between mother and baby. Skin-to-skin contact activates emotional stimuli in the mother and is effective in the release of odour and oxytocin hormone. Hospitals are encouraged to encourage skin-to-skin contact by creating a baby-friendly hospital. In the first two hours after birth, mothers' touching, loving, smelling and contact with their babies accelerate the initiation of sucking behaviours of the baby. In a study, it was observed that skin contact creates the first attachment and shortens the time to start breastfeeding [32]. In our study, the rate of mother-infant pairs with skin-to-skin contact within the first hour after birth was 88.6% (2020) and 93.8% (2021), which is quite high.

In studies, it was reported that the rate of exclusive breastfeeding was 81% [18], 71% of children under two years of age were breastfed within the first 1 hour after birth, the rate of breastfeeding in infants younger than six months was 41% [33]. In our study, the proportion of infants discharged with exclusive breastfeeding was 85.7% and 88.8% (2021). Breast milk is the best source of nutrition in the first 6 months of life. Therefore, increasing the number of mothers who exclusively breastfeed is an important public health goal. Hospital policies and practices are very important in achieving this goal. In Türkiye, the "Breastfeeding Promotion and Baby Friendly Health Institutions Programme", which aims to protect, encourage and support breastfeeding, has been implemented by the Ministry of Health since 1991 [34].

The World Health Organisation (WHO) launched the "Safe Childbirth Checklist (SCC) Collaboration" in 2012. The SCC was introduced with the aim of quality health care with evidence-based practices for the prevention and management of the leading causes of maternal and neonatal morbidity and mortality [2]. The WHO SCC is very useful for safety in obstetric care, but evidence of its effect on clinical outcomes is limited. In a study conducted in Brazil, the use of SCC in 2 hospitals was analysed and it was found that it was used in 83.3% and 33.6% of the hospitals. When the use of SCC was analysed according to the departments, the first hospital compliance at the time of admission in the first department was 55.3% and the second hospital compliance was 57.9%. In the second section, before delivery or caesarean section, first hospital compliance is 38.2% and second hospital compliance is 24.7%. In the third section, just before delivery (within the first 1 hour), first hospital adherence is 49.4% and second hospital adherence is 16.2%. In the fourth section (discharge), first hospital adherence was 38.1% and second hospital adherence was 22.9%. Despite the difficulties in completing the checklist, when the hospital with the highest compliance was evaluated, it was emphasised that the usefulness was high for the prevention and management of the main complications of childbirth. In our country, SCC is used to ensure that the mother and baby receive the best and safest care in the whole process from the mother's entry to the institution until the mother and baby leave the institution. SCC consists of four parts to be used at the time of admission (prenatal), before delivery (before caesarean section), postnatal and before discharge [35].

In a study conducted in India, it was reported that the use of SCC was effective in reducing early newborn deaths in the intrapartum process [36]. In our study, the rate of safe birth control list use was found to be 12.6% (2020) and 19.8% (2021) below the target value in two years. On-site trainings and surveillances are ongoing to increase the rate of SCC use. During the file control, it was observed that there was a SCC in each file, but not all sections were filled. Among the reasons why the checklist is not used effectively, it can be said that the hospital where the study was conducted is a training and research hospital, it serves as a regional hospital, the patient potential is high, the use of the first form is initiated in emergency obstetrics, that is, at the time of the first application, and the workload intensity. When the literature was examined, it was stated that the checklist was not

used effectively for similar reasons and the reason for not using the SCC effectively was the lack of a common understanding of the purpose of using the list or the lack of consensus on how to use the checklist [37].

SCC is not used effectively due to reasons such as resistance to use and lack of staff motivation, lack of understanding about how to use it, perception of increased workload related to the use of the checklist, high staff turnover, forgetting to use the checklist [38]. In a study, it was found that 85.6% of the staff working in maternity clinics were aware of the use of the SCC [39]. Within the scope of the Ministry of Health Quality Standards in Health, by finding indicators for maternity services, it ensures that the processes are measured and improvements can be made according to the results obtained. It is thought that this study will be guiding in determining the level of meeting the indicators used for the improvement and development of maternity services.

Limitations

There are some limitations in the research. One of them is that it was conducted in the largest public hospital in Antalya province, even if it was conducted in a single center. Another limitation is that data covering only 2 years were included in the study. Therefore, the results of the research cannot be generalized to the whole country.

Conclusion

In conclusion, it was determined that maternity services quality indicators were monitored to improve the quality of care and that the target value was achieved in half of the monitored indicators. Necessary improvement works have been initiated for the indicators of maternity services for which the target value was not reached. It is thought that the target values will be reached in the indicators after the improvement studies. Thanks to these indicators, complex obstetric care processes have become measurable and have become a guide for managers. In addition, it is thought that repetition the birth service quality indicator studies and planning studies covering the data of all training and research hospitals will contribute to the literature.

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