An evaluation of newborn follow-ups in family health centers in Burdur

Sevinç SÜTLÜ[a]

ª Burdur Mehmet Akif Ersoy University Faculty of Health Sciences . Burdur. Turkey.

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ABSTRACT

Aim: The present study aimed to evaluate the content of newborn follow-ups provided by family health centers (FHC) in Burdur and reveal the status of implementations of the programs to prevent infant mortality and ensure healthy growth.

Materials and method: The population of this descriptive study consisted of 567 women giving birth on October 01 - December 31, 2019 in Burdur city. The descriptive data, analyzed on the IBM SPSS 23.0 program, were shown as numbers, percentages, means, and standard deviations.

Findings: The mean age of the infants was 76.3±34.3 days. Vaccination cards of 99.4% were checked, while 100% were recruited to follow-ups within the scope of the Neonatal Screening Program. Besides, hearing screening and USG were performed for 98.8% and 83.8% respectively. Almost all infants (99.6%) were breastfed, and 93.3% were still being breastfed at the study date.

Conclusion: It was concluded that newborn follow-ups offered in FHCs are performed adequately in many parameters. However, there is still some ground to be covered for each baby's complete access to each service.

Key Words: Newborn, Follow Ups, Family Health

INTRODUCTION

Despite the increasing number of deliveries in healthcare facilities, maternal and newborn mortality has not significantly been reduced. Therefore, the attention has shifted to the quality of care (1).

Accessibility to and benefiting from healthcare services, service quality, and standardization are of great importance in infancy, childhood, and adolescence starting from birth to be able to prevent infant and child mortality. It is also required for the healthy development of infants and a healthy society. In this regard, the Ministry of Health (MoH) has introduced "Infant, Child, and Adolescent Monitoring Protocols" to identify the service delivery criteria. The protocol determines the number and contents of follow-ups to be provided from delivery.

Accordingly, it is expected that infants are recruited to a total of 9 follow-ups, the first in the hospital and 8 in family health centers (FHCs), until reaching one year old. Three of them are performed between the first and 41st days in the neonatal period. In these follow-ups, it is required to provide counseling for parents to ensure proper nutrition, screening for early diagnosis and treatment of diseases, vaccination, and physical examinations (2).

In the scope of physical examinations, the protocols require measuring the head circumference, weight, and body temperature of infants. The "Breastfeeding Promotion and Baby-Friendly Healthcare Facilities" program aims to ensure breastfeeding immediately after delivery, feeding the infants only with breast milk for the first six months, and continuing

breastfeeding until two years of age and beyond. In this context, it is expected to provide active breastfeeding counseling for mothers and eliminate possible barriers to breastfeeding. In addition, newborns are started to be supplied with vitamin D within the scope of the "Prevention of Vitamin D Deficiency in Infants and Protection of Bone Health" program. For the early diagnosis and treatment of hereditary diseases, infants are recruited to heel prick test in the scope of the Neonatal Screening Program (NSP). Moreover, a hearing test should be performed for each infant (the Newborn Hearing Screening Program), and all infants should be evaluated for hip dislocation (the Screening Program for Developmental Dysplasia of the Hip (DDH)) (3). Ultimately, the present study aimed to evaluate the content of newborn follow-ups provided by family health centers (FHC) in Burdur and reveal the status of implementations of the programs to prevent infant mortality and ensure healthy growth.

MATERIALS AND METHOD

The data were collected through several visits to puerperal women within the assessment of postpartum care provided by family physicians. The target population of this descriptive study consisted of 567 women giving birth on October 01-December 31, 2019 in Burdur city. It was aimed to reach the whole population; therefore, a total of 500 puerperal women were reached. However, five women were not included in the study since 2 of them gave birth to stillbirth, and babies of three were being followed up in the neonatal intensive care unit. Overall, the data of 495 (87.3%) infants were used.

Variables

The study utilized the data of the infants of the puerperal women visited within the assessment of postpartum care services. The data collection form was prepared based on the infant follow-up protocols of the MoH and includes questions about women's sociodemographic and biodemographic characteristics, puerperal care, and newborn care. The "newborn care" section of the form covers the services that should be provided between the first

and 41st days in the neonatal period according to "Infant, Child, and Adolescent Monitoring Protocols."

Neonatal follow-up parameters

Physical examinations: Measurements of temperature, head circumference, and weight and auscultation

Newborn screening: heel prick test (NSP), hearing screening, and USG for DDH

Nutrition: Vitamin D supplementation, breastfeeding

Vaccination: vaccination card for infants and missing vaccine

Ethical considerations: The Mehmet Akif Ersoy University Non-Invasive Clinical Research Ethics Committee granted ethical approval to the study (GO 2019/63). Also verbal consent was obtained from the mothers.

Data Collection

The study utilized the data of the infants of the puerperal women visited within the assessment of postpartum care services. The data were collected by midwives and nurses serving in Burdur Central Community Health Center using the face-to-face interview technique between November 10 and January 31, 2020. Prior to the procedure, midwives and nurses were given training for data collection to ensure standardization.

Statistical analysis: The data were analyzed using IBM SPSS version 23.0 (IBM Corp., Armonk, NY). Descriptive data were shown as numbers, percentages, means, and standard deviations.

RESULTS

The mean age of the puerperal women was 28.1±5.4 years, and 2% gave birth under the age of 18 years. Most of the women (78.2%) used contraceptive methods after delivery. The most commonly preferred method was condoms (43.7%), followed by tubal ligation (10.9%), hormonal injection (5.7%), intrauterine device (5.4%), oral contraceptives (2.8%). About one-third (31.5%) of the women adopted traditional contraceptive methods. Sociodemographic, fertility, and delivery characteristics of the mothers are summarized in Table 1.

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Table 1. Sociodemographic, fertility and delivery characteristics of mothers (n=495)

Sociodemographic characteristics	n	%	Pregnancy characteristics	n	%
Age			**First pregnancy**		
18 years and below	10	2.0	Yes	151	30.5
19-34 years	415	83.8	No	344	69.5
35+ years	70	14.1	**Delivery interval***		
Place of residence			Less than 2 years	98	28.5
City center	181	36.6	2 years and more	246	71.5
District	203	41.0	**Spontaneous abortion***		
Town/village	111	22.4	Yes	104	30.2
Family type			No	240	69.8
Nuclear family	416	84.0	**Induced abortion***		
Extended family	79	16.0	Yes	6	1.7
Kinship status with spouse			No	338	98.3
Yes	39	7.9	**Stillbirth***		
No	456	92.1	Yes	1	0.3
Type of mariage			No	343	99.7
Arranged marriage	182	36.8	**Child mortality (under 5 years)***		
Companionate marriage	313	63.2	Yes	7	2.0
Civil marriage			No	337	98.0
Yes	477	96.4	**Total**	344	100.0
No	18	3.6	**Place of delivery**		
Health insurance			State hospital	345	69.7
Yes	467	94.3	Private hospital	130	26.3
No	28	5.7	University hospital	20	4.0
Educational attainment			**Type of delivery**		
Compulsory education (8 years)	353	71.3	Natural	199	40.2
Secondary education or higher	142	28.7	Cesarean Delivery	296	59.8
Employment status			**Hospitalization**		
Employed	140	28.3	Less than 2 days	210	42.4
Unemployed	355	71.7	2 days and more	285	57.6
Income level			**Delivery time**		
Adequate	250	50.5	Premature	99	20.0
Moderate	171	34.5	Full-term	380	76.8
Inadequate	74	14.9	Post-term	16	3.2
Total	**495**	**100.0**	**Total**	**495**	**100.0**

*Among those without first pregnancy

More than half of the infants (59.8%) were born by cesarean section (C/S) and 76.8% on time. While 8.0% of mothers giving natural delivery were hospitalized for less than a day, 19.2% giving birth by C/S received inpatient care for less than two days. The mean age of the infants was 76.3±34.3 days; the youngest was five days old, while the oldest was 157 days old. The procedures in the scope of neonatal follow-ups are listed in Table 2.

Table 2. Physical characteristics of newborns and relevant care services (n=495)

		n	%
Newborn sex	Boy	250	50.5
	Girl	245	49.5
Birth weight	Below 2500 gr.	34	6.9
	2500-4000 gr.	452	91.3
	4001+ gr.	9	1.8
Heel prick test	Yes	495	100.0
Hearing screening	Yes	489	98.8
	No	6	1.2
USG for DDH	Yes	415	83.8
	No	80	16.2
Vitamin D supplementa-tion	Yes	481	97.2
	No	14	2.8
Vaccination card	Yes	492	99.4
	No	3	0.6
Missing vaccine	No	494	100.0
Head circumference measurement	Yes	485	98.0
	No	10	2.0
Weight measurement	Yes	490	99.0
	No	5	1.0
Temperature measurement	Yes	339	68.5
	No	156	31.5
Auscultation	Yes	265	53.5
	No	230	46.5
Total		**495**	**100.0**

Almost all newborns (99.6%) were breastfed for a while right after delivery. A significant proportion of mothers (11.9%) reported not receiving breastfeeding counseling from the hospital or FHCs (Table 3).

Table 3. Breastfeeding characteristics (n=495)

Breastfeeding characteristics	n	%
Breastfeeding counseling		
Received	436	88.1
None	59	11.9
Time of first breastfeeding		
None	2	0.4
In the first hour of delivery	359	72.5
After the first hour of delivery	108	21.8
After the first day of delivery	26	5.3
Total	**495**	**100.0**
Nutritional supplements before first breastfeeding *		
Yes	217	44.0
No	276	56.0
Nutritional supplements within 3 days after delivery *		
Yes	291	58.8
No	202	40.8
Giving infant water since delivery? *		
Yes	372	75.5
No	121	24.5
Current breastfeeding status*		
Continuing	462	93.3
Ceased	31	6.3
Total	**495**	**100.0**

* Those breastfeeding their infant after delivery

DISCUSSION

More than half of the infants (59.8%) were born by C/S. In 2018, the Tukey Demographic and Health Survey (TDHS) report showed that the C/S percentage was 51.5% across the country and 55.4% in the Mediterranean Region, where Burdur is located (4). In this study, the C/S level in Burdur was above the TDHS 2018 data. To prevent maternal and infant mortality, discharge is often expected at least 24 hours after natural delivery and at least 48 hours after C/S (5). In this study, 8.0% and 19.2% of the mothers were discharged earlier than desired, respectively. Again, according to the TDHS 2018 data, 12.3% of the mothers were discharged less than a day following natural delivery, and 73.5% were discharged within the first 2 days after C/S (4).

Low birth weight (LDA) is not only an indicator of insufficient maternal nutrition but is defined as a facilitator of potential neonatal mortality. In the present study, it was found that 6.9% of infants were born with LDA. This rate remains below the 11.9% level determined for Turkey previously (4).

Vaccination of children against vaccine-preventable diseases is among the cost-effective programs in reducing infant and child morbidity and mortality. It was discovered that almost all infants in the study (99.4%) had a vaccination card. Besides, considering the mothers' statements, it was determined that all infants did not have a missing vaccine. The TDHS reported that 93.4% of 12–24-month-old children were vaccinated (58.9% with an official vaccination card) and that the level of proper vaccination by month was 66.9% (4).

In general, in the early period when it is difficult to make a clinical diagnosis, relevant screening programs are implemented for diseases that are relatively common in the neonatal period and may cause mental retardation, brain damage, and irreversible damage. Neonatal screening in Turkey started with Phenylketonuria screening in 1993 and began to be called Neonatal Screening Program (NSP) with the addition of screening for congenital hypothyroidism in 2006. The program was extended with screening for biotinidase deficiency in October 2008 and Cystic Fibrosis in January 2015. Screening for Congenital Adrenal Hyperplasia has been piloted in 41 cities since 2017 (6). The data of the MoH indicated that 97.5% of infants in Turkey were screened within the scope of NSP (7). Again, a study sharing Turkey's data reported this rate to be 96.8% (8). In this study, it was determined that all infants were screened (100.0%), and this rate is above the findings in the previous research.

It is deemed essential to detect the hearing loss of an infant during delivery or in the postnatal period to prevent adverse effects of the disorder on the child's speech development or provide appropriate treatment and rehabilitation to reinforce their psychological and social development. For this purpose, the Newborn Hearing Screening Program is implemented for early detection of hearing loss among infants (6). It was found in this research that 98.8% of the infants were recruited to relevant hearing screening tests. This rate is higher than the previous findings in the literature (92.0-92.8%) (7,8).

Developmental Dysplasia of the Hip (DDH) is an orthopedic problem that can be encountered in many different forms, from the instability of the hip joint to complete dislocation. The idea on which the scientific community agrees on this clinical condition is that a very large part of DDH can be fully treated with early diagnosis, without any adverse effects on the patient's future life. The DDH program envisages that all infants will be examined for hip dislocation in the neonatal period (3-4 weeks), and if needed, they will be evaluated with USG for DDH in the first 3-6 weeks. However, family physicians in the field prefer to refer all infants for USG. Accordingly, 83.8% of the infants in Burdur were screened with USG for DDH. While the MoH data showed the DDH screening rate in infants to be 94.0%, it was reported to be 79.6% in another study (7,8). The lower rate in that study when compared to the MoH may be because the latter study might have extracted the data inquiring only about physical examination and risk information.

Besides, there is no data sharing regarding USG screening.

In physical examinations, the healthcare staff measured the weight of almost all infants (99%), head circumference of 98%, and body temperature of 68.5%. Besides, it was inquired whether family physicians performed auscultation to reveal to what extent they were engaged in these examinations. Accordingly, it was found that the physicians performed auscultation for 53.5% of the infants. A previous study, utilizing the Turkish Statistical Institute's Turkey Health Survey 2014 microdata to evaluate the healthy child follow-up practices in Turkey, concluded that the weight of 93.1% of the infants and the height of 91.9% were measured after delivery (8).

It is known that the level of vitamin D in breast milk cannot meet the daily need of an infant. Therefore, the Vitamin D Deficiency Prevention and Control Program has been implemented in Turkey since 2005 to prevent rickets, which may develop due to insufficient sunlight exposure or exogenous vitamin D. In this program, vitamin D is provided at 400 IU/day for free for infants till they become one year old. The present study discovered that 97.2% of the infants were receiving vitamin D. A study conducted in a hospital setting reported that the rate of using vitamin D was around 80-90% in the first month of delivery and decreased to 75% after the 6th month (9). Another study in Turkey found the rate of vitamin D use in infants to be 73.2% (8).

On the other hand, 11% of the mothers reported not receiving breastfeeding counseling from relevant staff in hospitals or FHCs. Almost all infants (99.6%) were breastfed just after delivery, and 93.3% were still being breastfed. Nearly half (44.0%) were given nutritional supplements before the first breastfeeding, and more than half (58.8%) received them within the first 3 days.

The rule of thumb practices for infant and child nutrition include early breastfeeding (within the first 1 hour of life), only breastfeeding for the first 6 months, and breastfeeding at the age of 2 and after together with appropriate complementary foods.

It was found in this study that 72.5% of the infants were breastfed in the first hour right after delivery, while 94.3% were fed with breast milk on the first day. These rates were uttered as 71.3% and 85.6%, respectively, in the TDHS 2018 report. On the other hand, 41.7% of the babies were fed with supplements before breastfeeding, while 4.6% were not breastfed in the first month. According to UNICEF's State of the World's Children 2019 report, 44% of babies started to be breastfed within the first hour after birth, and 42% under 6 months old were only breastfed. In the first 3 days of life, 43% of newborns worldwide are frequently given liquids or foods other than breast milk, such as plain/sweetened water, honey, tea, animal milk, and infant formula (10). The rates of breastfeeding and continued breastfeeding in our study are above the world and Turkey averages. However, similar to the literature, the rates of supplementation before and during breastfeeding are high.

CONCLUSION

It was concluded that newborn follow-ups offered in FHCs are performed adequately in many parameters. However, there is still some ground to be covered for each baby's complete access to each service.

Acknowledgments

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