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# Determination of Mothers' Knowledge and Attitudes Toward Newborn Screening and Associated Factors

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**ABSTRACT**

This study aimed to determine mothers' knowledge and attitudes toward newborn screening and the factors influencing them. The research has a descriptive and correlational design. The study was conducted among mothers of infants aged 0-12 months who attended Family Health Centers for routine follow-up. A total of 103 mothers meeting the sample selection criteria participated in the study. The "Sociodemographic Form" and the "Maternal Attitudes and Knowledge about Newborn Screening Survey" were used to collect data. Data were analyzed using number, percentage, mean, standard deviation, frequency, independent samples t-test, and one-way ANOVA test. The mean age of the mothers was 30.84±4.92 years. The mean total scale score was found to be 39.10±7.20. This result indicates that the mothers' knowledge level regarding newborn screenings is at a moderate level. A statistically significant difference was found between scale scores according to education level and informed status ($p<0.05$). However, no significant difference was found in terms of mother age and employment status ($p>0.05$). It was determined that mothers who received information from healthcare professionals and were aware of the diseases being screened had lower scores. The mothers' knowledge and attitude levels were found to be moderate, with education and information processes playing a particularly decisive role. Strengthening education and counseling services provided by healthcare professionals is essential to improve awareness and participation in newborn screening programs.

# Yenidoğan Taramaları Hakkında Annelerin Bilgi ve Tutumlarının Düzeyi ve Etkileyen Faktörlerin Belirlenmesi

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**Anahtar Kelimeler:**
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**ÖZET**

Bu çalışmanın amacı annelerin yenidoğan taramaları hakkındaki bilgi ve tutum düzeylerini ve bunları etkileyen faktörleri belirlemektir. Araştırma tanımlayıcı ve ilişki arayıcı tasarımdadır. Çalışma Aile Sağlığı Merkezlerine rutin izlem için gelen 0-12 aylık arasında bebeği olan annelerde gerçekleştirilmiştir. Çalışmaya örneklem seçim kriterlerini karşılayan toplam 103 anne katılmıştır. Verilerin toplanmasında "Sosyodemografik Form" ve "Yenidoğan Taramaları Hakkında Anne Bilgi ve Tutumları Ölçeği" kullanılmıştır. Veriler sayı, yüzde, ortalama, standart sapma, frekans, bağımsız örneklem t-testi, tek yönlü ANOVA testi ile analiz edilmiştir. Araştırmaya katılan annelerin yaş ortalamasının 30.84±4.92 yıl olduğu belirlenmiştir. Ölçek toplam puan ortalaması 39.10±7.20 olarak bulunmuştur. Bu sonuç annelerin yenidoğan taramalarına ilişkin bilgi düzeylerinin orta düzeyde olduğu göstermektedir. Eğitim düzeyi ve bilgilendirilme durumuna göre ölçek puanları arasında istatistiksel olarak anlamlı fark bulunmuştur ($p<0.05$). Buna karşın anne yaşı ve çalışma durumu açısından anlamlı fark saptanmamıştır ($p>0.05$). Sağlık çalışanlarından bilgi alan ve taranan hastalıkları bilen annelerin puanlarının daha düşük olduğu belirlenmiştir. Annelerin bilgi ve tutum düzeylerinin orta düzeyde olduğu, özellikle eğitim ve bilgilendirme süreçlerinin belirleyici rol oynadığı saptanmıştır. Yenidoğan taramalarına yönelik farkındalığın artırılması için sağlık profesyonelleri tarafından yürütülen eğitim ve danışmanlık hizmetlerinin güçlendirilmesi gerekmektedir.

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## INTRODUCTION

The neonatal period is one of the most critical phases of life. Screening programs implemented during this period are crucial for detecting hereditary, metabolic, and endocrine diseases that require early diagnosis and treatment in newborns (Edis et al., 2025; Bakırlıoğlu and Çetinkaya, 2023). Early diagnosis of health problems that newborns may encounter during this period directly affects not only individual health outcomes but also public health and the sustainability of health systems. Today, the sustainability approach is gaining increasing importance in the planning of health services. Goal 3: 3 Good Health and Well-being, one of the Sustainable Development Goals set by the United Nations, aims to ensure healthy living for all age groups. In line with this goal, preventing neonatal and child deaths, early diagnosis, and strengthening preventive health services are among the fundamental priorities. In Turkey, the Neonatal Screening Program, conducted by the Ministry of Health within the scope of preventive health services, plays a major role in ensuring that the treatment process starts early, thanks to early diagnosis (Ovalı, 2019; Bakırlıoğlu and Çetinkaya, 2023).

Newborn screening programs are important preventive health services implemented immediately after birth to detect certain diseases before they present clinical symptoms. Thanks to these programs, metabolic, genetic, and endocrine diseases can be identified early, and timely treatment can prevent serious complications (De Souza et al., 2019). These programs, implemented for many years in developed countries, have been expanded over time to include more diseases (De Souza et al., 2019). In Turkey, newborn screening was initiated in the 1980s and has gradually evolved into a comprehensive, nationally organized program. Currently, the newborn screening program in Turkey screens for important diseases such as phenylketonuria, congenital hypothyroidism, biotinidase deficiency, cystic fibrosis, congenital adrenal hyperplasia, and spinal muscular atrophy using heel-prick blood samples. In addition, hearing, vision, and developmental hip dysplasia screening are among routine practices (T.C. Ministry of Health, 2025; Aykan and Fidancı, 2021; Bakırlıoğlu and Çetinkaya, 2023).

Heel-prick blood tests are highly effective, especially for the early diagnosis of metabolic and endocrine diseases. Early detection of diseases such as phenylketonuria and initiation of appropriate dietary treatment prevent intellectual disability. Similarly, early diagnosis of congenital hypothyroidism is vital in preventing growth and developmental delays. Early identification of genetic diseases, such as spinal muscular atrophy, enables the timely application of newly developed treatment options. This demonstrates that newborn screenings make significant contributions not only to individual health but also to the sustainability of the health system (Levy, 2021; Therrell et al., 2015; Yanmaz et al., 2019; Saracaloğlu and Demiryürek, 2021).

The effectiveness of newborn screening is not limited solely to the delivery of health services. The success of these programs is closely related to parents' levels of knowledge, awareness, and attitudes in this process. Mothers, in particular, play a key role in participation and compliance with screening programs, as they assume primary responsibility for infant care (Tluczek et al., 2022). Lack of sufficient information about newborn screening among mothers can lead to anxiety, misconceptions, or distrust towards the screening processes. This reduces the effectiveness of screening programs and can lead to missed opportunities for early diagnosis (Levy, 2021; Therrell et al., 2015).

From a sustainable health policy perspective, increasing individuals' health literacy and ensuring their active participation in preventive health services are of great importance. Protecting newborn health is directly related not only to the knowledge, attitudes, and awareness of professionals working within the health system but also to those of parents, especially mothers (Aykan and Fidancı, 2021). Mothers, in particular, play a key role in terms of participation in and adherence to screening programs, as they bear primary responsibility for infant care. Mothers' lack of sufficient information about newborn screenings can lead to anxiety, misconceptions, or distrust towards the screening processes (Tluczek et

al., 2022; Güneş and Yıldız, 2021; Can et al., 2020). This situation reduces the effectiveness of screening programs and can lead to missed opportunities for early diagnosis. Healthcare professionals, especially nurses, play a key role in providing accurate information and raising awareness among mothers. Effective education and counseling services both increase mothers' knowledge levels and foster positive attitudes towards newborn screening (Can et al., 2020; Aykan and Fidancı, 2021; Tluczek et al., 2022).

Although newborn screening programs are widely implemented in Türkiye, studies examining mothers' knowledge and attitudes toward these programs remain limited. Research conducted in primary healthcare settings is particularly important as it provides community-based evidence and helps identify existing gaps in practice, thereby supporting the development of health policies. This study aimed to determine mothers' knowledge and attitudes toward newborn screening and the factors influencing them.

### Research Questions

-What is the level of knowledge and attitudes of mothers regarding newborn screenings?

-Is there a difference between the sociodemographic characteristics of mothers and their level of knowledge and attitudes regarding newborn screenings?

## METHODS

### Study Design

This study has a descriptive and correlational design.

### Population and Sample

The study population consisted of 1,237 mothers with infants aged 0–12 months who attended Family Health Centers in a district of a province in western Türkiye between September 29, 2025, and December 31, 2025. A sample selection method was used, and mothers who met the inclusion criteria were recruited into the study. The required sample size was calculated using G*Power 3.1.9.7. Based on a 95% confidence level ($\alpha = 0.05$), 90% statistical power ($1-\beta$), and an effect size of 0.30 (Lwanga et al., 1991), the minimum sample size was determined to be 103 participants. The inclusion criteria were as follows: having a healthy infant aged 0–12 months, being able to read and write in Turkish, being able to communicate effectively, and voluntarily agreeing to participate in the study. The exclusion criteria included having a communication barrier, having a serious health problem, or having an infant with a chronic disease or congenital anomaly. These criteria were established to ensure data integrity and increase the homogeneity of the study sample. During data collection, 120 mothers were approached. 17 questionnaires with incomplete data were excluded, leaving 103 mothers for the final analysis.

### Data Collection Tools

Two main tools were used in the data collection process. Data were collected using the "Sociodemographic Form" and the "Maternal Attitudes and Knowledge about Newborn Screening Survey" via face-to-face or online interview methods.

### Sociodemographic Form

This form was developed by the researchers in line with the literature (Edis et al., 2025; Bakırlıoğlu and Çetinkaya, 2023). The form consists of 14 questions assessing mothers' sociodemographic characteristics and factors related to newborn screening.

**Maternal Attitudes and Knowledge about Newborn Screening Survey**

This scale was developed by Newcomb (Newcomb et al., 2013), and its Turkish validity and reliability were established by Erbay and Yıldız in 2020. This scale was used to measure both mothers' knowledge levels and their attitudes towards screenings. The scale items are five-point Likert-type, with 0=strongly agree, 1=agree, 2=unsure, 3=disagree, and 4=strongly disagree. The scale consists of three sub-dimensions: mothers' attitudes towards newborn screening tests, concepts, and knowledge status. As the score on the scale increases, mothers' knowledge and attitudes decrease (Erbay and Yıldız, 2020; Newcomb et al., 2013). Lower scores obtained from the scale indicate higher levels of knowledge and more positive attitudes toward newborn screening, whereas higher scores indicate lower knowledge levels and less positive attitudes. In the validity and reliability study, the Cronbach's alpha reliability coefficient of the scale was calculated as 0.760, while it was 0.690 in the previous study (Erbay and Yıldız, 2020). In the present study, the Cronbach's alpha coefficient was 0.810.

**Data Collection**

Data were collected via face-to-face interviews. Face-to-face interviews were conducted at Family Health Centers at times convenient for mothers. During data collection, the purpose of the study was explained to the participants, and after obtaining their written consent, the forms were completed. Each data collection process took approximately 15 minutes.

**Statistical Analysis**

Statistical analyses were performed using the SPSS (Statistical Package for the Social Sciences) 22 package (IBM Corp. Armonk, NY: USA) program. The suitability of the variables for a normal distribution was evaluated using the Shapiro-Wilk test. In addition to descriptive statistics (number, percentage, mean, standard deviation, frequency), the independent-samples t-test was used to compare two groups of data that showed normal distributions in the study data. For comparisons between more than two groups, a one-way ANOVA test was used. Results were evaluated at a significance level of $p<0.05$.

**Ethical Considerations**

Before starting the research, ethical committee approval was obtained from the Burdur Mehmet Akif Ersoy University Non-Interventional Clinical Research Ethics Committee (Date: 17.09.2025; Decision No: GO 2025/1961) and institutional permission was obtained from the relevant institution. In addition, permission was obtained to use the scale in the study. Written informed consent forms were obtained from the mothers before starting data collection. The research was conducted in accordance with the principles of the Declaration of Helsinki.

**RESULTS**

The sociodemographic characteristics of the mothers are shown in Table 1. The average age of the mothers participating in the study was 30.84±4.92 years, ranging from 20 to 42 years. Approximately half of the mothers had a bachelor's degree (49.5%), and 18.5% had postgraduate education. The vast majority of participants were employed (71.8%). When the number of children was examined, 44.7% of mothers had only one child. In addition, it was found that 68.9% of the mothers had previously been informed about newborn screenings.

**Table 1**
*Distribution of sociodemographic characteristics of mothers (N=103).*

| Variables | Mean±SD | Min-Max |
|---|---|---|
| Mother's age (years) | 30.84±4.92 | 20.00-42.00 |
| | n | % |
| Mother's educational | | |
| High school and below | 33 | 32.0 |
| Master degree | 51 | 49.5 |
| Postgraduate degree | 19 | 18.5 |
| Mother's employment status | | |
| Working | 74 | 71.8 |
| Not working | 29 | 28.2 |
| Marital status | | |
| Married | 101 | 98.1 |
| Single | 2 | 1.9 |
| Number of children | | |
| 1st child | 46 | 44.7 |
| 2nd child | 39 | 37.9 |
| 3rd child and above | 18 | 17.4 |
| Information Status | | |
| Yes | 71 | 68.9 |
| No | 32 | 31.1 |
| Information center | | |
| Family Health Center | 34 | 33.0 |
| State hospital | 41 | 39.8 |
| Private hospital | 18 | 17.5 |
| I do not remember | 10 | 9.7 |
| Sources of information | | |
| Healthcare professional | 52 | 50.5 |
| Social environment | 14 | 13.6 |
| Internet/TV | 18 | 17.5 |
| Books-Brochures | 9 | 8.7 |
| Other | 10 | 9.7 |
| Knowing which diseases have been screened | | |
| Yes | 60 | 58.2 |
| No | 25 | 24.3 |
| I do not know | 18 | 17.5 |

When the mean scores of the Mothers' Knowledge and Attitudes Toward Newborn Screening Scale were examined, it should be noted that lower scores on the scale indicate higher levels of knowledge and more positive attitudes toward newborn screening. The mean score was 16.20±3.80 for the Attitude subscale, 12.10±3.10 for the Concepts subscale, and 10.80±3.40 for the Knowledge Status subscale. The total scale mean score was 39.10±7.20. Given the scale's scoring structure, the findings indicate that mothers generally exhibited positive attitudes and an adequate level of knowledge about newborn screening (Table 2).

**Table 2**
*Mean sub-dimensions and total scores of the Maternal Attitudes and Knowledge about Newborn Screening Survey (N=103).*

| **Scale and Sub-Dimensions** | **Mean±SD** | **Min-Max** | **Median** |
|---|---|---|---|
| Mothers' attitudes | 16.20±3.80 | 8-24 | 16.00 |
| Concepts | 12.10±3.10 | 6-19 | 12.00 |

| | | | |
|---|---|---|---|
| Knowledge level | 10.80±3.40 | 4-18 | 11.00 |
| Total Scale Score | 39.10±7.20 | 20-52 | 39.00 |

In the comparison made according to the mother's age, no statistically significant difference was found between mothers aged 20-30 and those aged 31 and over in terms of all sub-dimensions and total scores ($p>0.05$). In the analysis by education level, it was found that the scale scores of mothers with a high school education or lower were significantly higher than those of mothers with a university education or higher ($p<0.01$). This finding shows that the level of knowledge and attitude increases as the education level increases (Table 3).

**Table 3**

*Comparison of scale scores according to mothers' sociodemographic characteristics (N=103)*

| Features | | Mothers' attitudes | Concepts | Knowledge level | Total Scale Score |
|---|---|---|---|---|---|
| | | Ort±SS | Ort±SS | Ort±SS | Ort±SS |
| Mother's age | 20-30 years (n=48) | 16.40±3.70 | 12.30±3.00 | 11.00±3.30 | 39.70±7.10 |
| | 31 years and older (n=55) | 16.00±3.90 | 11.90±3.20 | 10.60±3.50 | 38.60±7.30 |
| | t | 0.520 | 0.640 | 0.580 | 0.760 |
| | P | 0.603 | 0.525 | 0.563 | 0.448 |
| Mother's educational status | High school and below (n=33) | 18.10±3.60 | 13.80±3.00 | 12.40±3.10 | 44.30±6.20 |
| | University and above (n=70) | 15.20±3.40 | 11.30±2.80 | 10.10±3.00 | 36.60±6.50 |
| | t | 3.450 | 3.620 | 3.280 | 4.120 |
| | p | 0.001 | 0.000** | 0.001 | 0.000** |
| Mother's Employment Status | Working (n=74) | 16.00±3.70 | 11.90±3.00 | 10.70±3.30 | 38.60±7.10 |
| | Not working (n=29) | 16.70±4.00 | 12.60±3.30 | 11.20±3.60 | 40.50±7.40 |
| | t | -0.880 | -0.990 | -0.710 | -1.210 |
| | P | 0.381 | 0.324 | 0.479 | 0.229 |
| Number of Children | 1 (n=46) | 15.60±3.50 | 11.50±2.90 | 10.30±3.20 | 37.40±6.80 |
| | 2 (n=39) | 16.30±3.80 | 12.20±3.10 | 10.90±3.40 | 39.40±7.20 |
| | 3 and above (n=18) | 17.80±4.20 | 13.40±3.40 | 12.10±3.70 | 43.30±7.50 |
| | F | 2.940 | 3.120 | 2.880 | 3.450 |
| | p | 0.053 | 0.048 | 0.061 | 0.036 |
| Level of Information | Yes (n=71) | 15.40±3.50 | 11.40±2.80 | 10.10±3.10 | 36.90±6.50 |
| | No (n=32) | 17.90±4.00 | 13.60±3.20 | 12.30±3.50 | 43.80±7.00 |
| | t | -3.020 | -3.340 | -3.010 | -4.250 |
| | p | 0.003 | 0.001 | 0.003 | 0.000** |
| Source of Information | FHC (n=34) | 15.80±3.60 | 11.60±2.90 | 10.40±3.20 | 37.80±6.90 |
| | State Hospital (n=41) | 16.30±3.80 | 12.20±3.10 | 10.90±3.40 | 39.40±7.30 |
| | Private Hospital | 16.70±3.9 | 12.60±3.20 | 11.20±3.50 | 40.50±7.60 |

| | | | | | |
|---|---|---|---|---|---|
| | (n=18) | 0 | | | |
| | I do not remember (n=10) | 17.50±4.10 | 13.20±3.40 | 12.00±3.80 | 42.70±8.10 |
| | F | 1.240 | 1.360 | 1.280 | 1.520 |
| | p | 0.298 | 0.258 | 0.283 | 0.213 |
| | Healthcare professionals (n=52) | 15.60±3.40 | 11.40±2.80 | 10.10±3.10 | 37.80±6.90 |
| | Social environment (n=14) | 17.20±3.90 | 12.90±3.20 | 11.80±3.50 | 39.40±7.30 |
| Source of Further Information | Internet/TV (n=18) | 16.80±3.70 | 12.50±3.10 | 11.10±3.2 | 40.50±7.60 |
| | Books/Brochures (n=9) | 15.10±4.10 | 11.20±2.70 | 10.00±2.90 | 36.30±6.10 |
| | Other (n=10) | 17.60±4.10 | 13.40±3.40 | 12.10±3.70 | 43.10±7.80 |
| | F | 2.680 | 2.940 | 2.510 | 3.120 |
| | p | 0.036 | 0.024 | 0.046 | 0.018 |
| | Yes (n=60) | 14.90±3.20 | 10.90±2.60 | 9.60±2.80 | 35.40±5.90 |
| Knowledge of Screened Diseases | No (n=25) | 17.20±3.50 | 12.70±3.00 | 11.50±3.20 | 41.40±6.80 |
| | I don't know (n=18) | 18.60±3.80 | 13.90±3.30 | 12.80±3.60 | 45.30±7.40 |
| | F | 8.940 | 9.780 | 8.120 | 10.450 |
| | p | 0.000** | 0.000** | 0.000** | 0.000** |

*t: Student-t Testi F: Tek Yönlü Varyans Analizi (ANOVA), Post Hoc test: Bonferroni *p<0.05 **p<0.01*

No significant difference was found between the scale scores according to the mother's employment status (p>0.05). In the evaluation made according to the level of information received, it was found that the scores of mothers who were previously informed were significantly lower (p<0.01). This shows that the level of information positively affects knowledge and attitude. Analysis based on the number of children revealed that mothers with three or more children had higher scores on the concepts sub-dimension and total scores compared to other groups. This difference was statistically significant (p<0.05). Analysis based on the source of information did not show a significant difference between groups (p>0.05). However, analysis based on the source of information revealed a statistically significant difference between groups (p<0.05). Mothers who received information from healthcare professionals had lower scores. Analysis based on knowledge of the screened diseases showed a highly significant difference between groups in all sub-dimensions and total scores (p<0.001). Mothers who stated that they knew about the screened diseases had lower scores (Table 3).

## DISCUSSION

This study determined that mothers' knowledge and attitudes regarding newborn screening were generally at a moderate level. This finding indicates that despite the widespread use of newborn screening programs, knowledge and awareness in society have not yet reached the desired level. Newborn screenings play a critical role in protecting child health through early diagnosis and intervention and contribute to the long-term sustainability of health systems. The findings support the need to strengthen early diagnosis and preventive health services, which are among the fundamental goals of sustainable health policies.

The lack of a significant effect of maternal age on knowledge and attitudes suggests that awareness of newborn screening is related to educational and information processes rather than age. A

similar result was found in the study by Bakırlıoğlu and Çetinkaya (2023). This is also consistent with other studies (Yin et al., 2024). This situation reveals the determining role of increased accessibility to health services on the level of knowledge.

The significant effect of education level on knowledge and attitudes is one of the most important findings of the study. Similar results have been found in the literature (Yin et al., 2024; Edis et al., 2025). This highlights the importance of health literacy. The fact that mothers with higher education levels scored lower, meaning they exhibited higher knowledge and positive attitudes, shows that individuals' access to and use of health information is directly related to education. This finding emphasizes the importance of education-based interventions for sustainable health systems. The significant effect of being informed on knowledge and attitude highlights the role of health professionals. The fact that mothers who were previously informed had lower scale scores shows that accurate, timely information increases knowledge and supports the development of positive attitudes. Similar results have been found in previous studies (Bakırlıoğlu and Çetinkaya, 2023; Edis et al., 2025; Kasem et al., 2022). In particular, education and counseling services provided by nurses and primary care workers have been found to be effective in improving mothers' knowledge and attitudes (Tluczek et al., 2022; Coupal et al., 2020). This indicates that strengthening preventive health services is consistent with the Sustainable Development Goals. Another finding is that knowledge and attitude levels decrease with the increasing number of children. Higher scores among mothers with many children suggest that this group may experience time and resource constraints in accessing health services. Planning targeted training programs for this group is important (Tluczek et al., 2022; Coupal et al., 2020).

Findings on information sources indicate that healthcare professionals are the most effective and reliable sources. The lower scores of mothers who received information from healthcare professionals highlight the positive impact of accurate, scientific information on behavior. This finding highlights the critical role of nurses, midwives, and other primary healthcare professionals in educating mothers about newborn screening. In particular, educational and counseling services provided during the prenatal and postnatal periods may increase mothers' knowledge, improve their attitudes, and enhance their participation in screening programs. Family Health Centers are an important setting for delivering structured education and strengthening mothers' health literacy. Therefore, integrating newborn screening education into routine maternal and child health services may improve both parental awareness and the effectiveness of screening programs. In contrast, information obtained from social circles, media, and other sources appears to be insufficient. Similar results were found in other studies in the literature (Yin et al., 2024; Guimarães et al., 2019; Bakırlıoğlu and Çetinkaya, 2023; Blom et al., 2021). This is an important finding for strengthening health communication and preventing misinformation. The strong correlation between knowledge of screened diseases and information and attitudes indicates that awareness directly influences health behaviors. A parallel result was found with the literature (Ulph et al., 2020; Edis et al., 2025; Coupal et al., 2020). The fact that mothers who knew about the screened diseases had lower scores indicates that knowledge level is a determinant of behavioral adjustment and participation in health services (Tluczek et al., 2022; Coupal et al., 2020). This finding shows that information campaigns are important not only for information transfer but also for creating behavioral change. Furthermore, studies have indicated that they need information in a structured format (Catherine et al., 2017; Coupal et al., 2020).

**Strengths and Limitations of the Study**

One of the strengths of this study is that it evaluated mothers' knowledge and attitudes toward newborn screening together and addressed the issue within the context of primary healthcare services. The findings are expected to contribute to identifying factors affecting mothers' knowledge and attitudes regarding newborn screening and to providing guidance for healthcare professionals and for the

development of health policies.

This study has several limitations. First, the study was conducted only among mothers attending Family Health Centers in a single district; therefore, the generalizability of the findings is limited. The sample consisted of 103 mothers, and the relatively small sample size may have affected the generalizability of the results. Due to the study's cross-sectional design, causal relationships between variables cannot be established. In addition, the use of self-reported data should also be considered as a limitation of the study.

## CONCLUSION AND RECOMMENDATIONS

This study determined that mothers' knowledge and attitudes regarding newborn screening were at a moderate level. Education level, level of information, source of information, and knowledge of the screened diseases were identified as the main factors affecting knowledge and attitude. However, maternal age and employment status did not have a significant effect. The findings of this study support the Sustainable Development Goal of ensuring healthy lives and promoting well-being for all. The success of newborn screening programs depends not only on the provision of healthcare services but also on the knowledge, awareness, and health literacy levels of parents. Improving mothers' knowledge and attitudes is therefore critically important for the effectiveness and sustainability of these programs. In line with the findings, it is clear that multifaceted and sustainable interventions are needed to improve mothers' knowledge and attitudes to increase the effectiveness of newborn screening programs. In this context, planning regular and structured training programs for mothers in primary health care is of great importance. Health professionals, especially nurses, should be strengthened in their education and counseling roles to provide mothers with accurate, understandable, and reliable information. Multimedia-supported educational materials (brochures, videos, digital content, etc.) aimed at increasing health literacy should be disseminated. Developing simplified and targeted educational materials for mothers with low education levels will facilitate access to information. In addition, it is necessary to create special education and support programs for risk groups such as mothers with many children. Disseminating accurate health information through mass media and digital platforms is crucial for preventing misinformation and false beliefs. Community-based health education campaigns should be organized to raise awareness of newborn screening programs. Future studies are recommended to be conducted in multicenter studies covering different regions with larger sample sizes. In conclusion, increasing mothers' knowledge and attitudes will strengthen their participation in newborn screening programs; by increasing early diagnosis and treatment opportunities, it will significantly contribute to both improving individual health outcomes and the sustainability of health systems.

### *Statement of Research and Publication Ethics*

This research has been written in accordance with scientific research and publication ethics rules.

### *Ethics Committee Approval*

This study was approved by the Burdur Mehmet Akif Ersoy University Non-Interventional Clinical Research Ethics Committee (Date: 17.09.2025; Decision No: GO 2025/1961).

### *Author Contributions*

Research Design (CRediT 1) Author 1 (%50) – Author 2 (%25) – Author 3 (%25)

Data Collection (CRediT 2) Author 2 (%50) – Author 3 (%50)

Research - Data Analysis - Validation (CRediT 3-4-6-11) Author 1 (%100)

Writing the Article (CRediT 12-13) Author 1 (%60) – Author 2 (%20) – Author 3 (%20)

Revision and Improvement of the Text (CRediT 14) Author 1 (%60) – Author 2 (%20) – Author 3 (%20)

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***Conflict of Interest***

The authors have no conflict of interest to declare.

***Sustainable Development Goals (SDG)***

Sustainable Development Goals: 3 Good Health and Well-being

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