

# Maternal Beliefs and Attitudes Concerning Neonatal Jaundice in Southeast Turkey

## Türkiye'nin Güneydoğu Bölgesi'nde Annelerin Sarılıkla İlgili İnanışları ve Davranışları

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**ABSTRACT Objective:** Neonatal Jaundice (NNJ) is a symptom in which the recognition, treatment and prognosis depend on the mother's beliefs, attitudes and behavior. Mothers may play an important role in the management of this disease. Particularly in developing regions, some traditional healing methods (THMs) are used by mothers or other caregivers. In this study, we described the regional healing methods and mothers' beliefs and attitudes for NNJ. **Material and Methods:** Between 01 May 2005 and 13 December 2007, all mothers of infants with NNJ were interviewed using a questionnaire to collect demographic data and information regarding their beliefs and attitudes for NNJ. Frequency distributions and Chi square analyses were used to compare mothers who used THMs with those who did not. **Results:** A THM was used by 41.9% of the mothers. Of the mothers under 25 years of age, 62.9% had used a THM, although there was no significant difference between the age groups. There were invasive and harmful THMs known or used by mothers such as "cutting the infant's post auricular area", "puncturing the infant's earlobe", "cutting the infant's palate" and "burning the infant's body". There were also some non-invasive methods like "sunning the infant" and "placing yellow cloths on the infant's face or bed". **Conclusion:** Application of harmful THMs for NNJ was revealed in the study population. Recognition of those THMs may enable health professionals to develop preventive methods of avoidance.

**Key Words:** Jaundice, neonatal; maternal behaviour; Turkey; medicine, traditional

**ÖZET Amaç:** Yenidoğan sarılığı (YDS), tedavisi ve seyri iyi bilinen bir semptomdur. Annelerin tutum ve davranışları yenidoğan sarılığının tedavisinde önemli rol oynar. Özellikle gelişmekte olan bölgelerde bazı geleneksel iyileştirici yöntemler (GİY) anneler ya da bebeğe bakım veren diğer bireyler tarafından uygulanmaktadır. Bu çalışmada, bölgesel olarak yenidoğan sarılığında kullanılan GİY'lerin, yenidoğan sarılığı olan bebeklerin annelerinin bu konudaki inanış ve davranışlarının belirlenmesi amaçlandı. **Gereç ve Yöntemler:** 1 Mayıs 2005-13 Aralık 2007 tarihleri arasında YDS olan ve bu nedenle hastaneye başvuran anneler ile birebir, yüz yüze görüşülüp anket formu uygulandı. GİY kullanan ve kullanmayan anneleri karşılaştırmada ki-kare testi ve sıklık dağılımı kullanıldı. **Bulgular:** GİY annelerin %41.9'u tarafından kullanılmaktaydı. Bu annelerin %62.9'u 25 yaşın altında idi. Fakat, yaş grupları arasında GİY kullanımı açısından fark yoktu. Uygulanan tehlikeli GİY'leri, bebeğin kulak arkasının kesilmesi, kulak lobunun delinmesi, dil altının kesilmesi, vücudunun yakılmasıydı. Bazı tehlikeli olmayan GİY'ler ise bebeğin güneşe çıkarılması, yüzünün ya da yatağının sarı bez ile örtülmesiydi. **Sonuç:** YDS olan bebeklerin anneleri ve bebeğe bakım verenler tarafından GİY çok yaygın bir şekilde uygulanmaktadır. Bu yöntemlerin kullanımı, sağlık çalışanları tarafından önenebilir ve bebeklere zarar verecek tehlikeli girişimler engellenebilir.

**Anahtar Kelimeler:** Yenidoğan sarılığı; annenin tutumu; Türkiye; geleneksel yöntemler

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Neonatal jaundice (NNJ) is a common condition worldwide in early neonatal life. At least 60% to 70% of full-term infants will become visibly jaundiced, which means a serum bilirubin level in excess of 5 to 7 mg/dL.<sup>1-3</sup> Jaundice is the most frequent reason for re-admission to hospitals in the first two weeks of life. In Turkey, NNJ rates have been reported in very few studies. According to Kılıç et al, the most common cause of hospitalization was neonatal hyperbilirubinemia (19.7%) and hyperbilirubinemia was detected in 12% of the newborns in the study by Tiker et al.<sup>4,5</sup> It is common practice in traditional communities to treat NNJ by traditional healing methods, which may cause other disorders or exacerbate jaundice. In developing countries, unfavorable customs and beliefs towards NNJ have been reported, such as the long-standing practice of herbal treatment of NNJ in China and India.<sup>6,7</sup> In Australia, 36% of mothers were in favor of using sunlight to treat NNJ.<sup>8</sup> Mothers were slightly better than physicians or nurses at estimating the degree of jaundice in their babies.<sup>9</sup> A more effective prevention strategy is to ensure follow-ups at appropriate intervals so that worsening jaundice can be detected and be quantified by reliable methods. Throughout this follow-up period, mothers play an important role, but it is necessary to have information about maternal beliefs and attitudes to implement this strategy; it is also essential for successful management of NNJ and for successful educational intervention. However, there is insufficient research data describing maternal beliefs and attitudes about NNJ, particularly in traditional communities like Turkey. In this study, we aimed to evaluate some lesser-known uses of unfavorable healing methods used by the mothers in the Southeastern Region of Turkey by recording their traditional knowledge, beliefs and attitudes concerning NNJ.

## MATERIAL AND METHODS

This study included 224 mothers of infants 1 to 21 days of age attending a university hospital pediatrics department. The infants had jaundice with a total bilirubin level exceeding 11 mg/dL, and were hospitalized in the department between 01 May

2005 and 13 December 2007. A convenience sample comprising consecutive subjects attending the clinic was asked to participate. Written informed consent was obtained. The parents completed a self-administered 30-item questionnaire that included socio-economic and demographic items (sex, age, language speaking at home, income, and education). The mothers of infants with jaundice were asked which traditional methods they used for treatment of jaundice. The patterns of traditional healing methods were investigated, including the types of methods, their opinions about jaundice and how they fed their infant. Frequency distributions were performed and chi-square analyses were used to compare the demographic structures of mothers who had administered one of the traditional methods with those who had not. We used Epi-Info 2000 [(Centers for Diagnosis Control and prevention (CDC)-Atlanta)] and gave exact p values in the Tables.

## RESULTS

Table 1 shows the behavior of mothers when faced with the problem of jaundice. The infant was taken to a physician immediately by 43.8% of the mothers at the onset of jaundice or as soon as they recognized it. A traditional healing method was been used by 41.9% of the mothers and when the condition of the infant deteriorated, they had taken them to the hospital.

The association between the features of the mothers and the administration of traditional methods was shown in Table 2. A traditional method was used by 62.9% of the younger than 25, which comprised 24.1% of the total. Of the 50.9% of the mothers who were illiterate, 54.3% used a tradi-

**TABLE 1:** The behaviour of 224 mothers when neonatal jaundice occurred.

	n	%
Took infant to the hospital immediately at the onset of jaundice or on recognition	98	43.8
Took infant to the hospital after a period of observation without administering any treatment	32	14.3
A traditional method was used	94	41.9
Total	224	100

**TABLE 2:** Demographic features of the mothers and the association with usage of traditional methods, Southeastern Region, Turkey, 2006.

	Features of Mothers		Use of traditional methods		p
	n	%	n	%	
<b>Age (years)</b>					
Younger than 25	54	24.1	34	62.9	0.14
25-34	150	67.0	77	51.3	
Older than 34	20	8.9	11	55	
<b>Education level</b>					
Illiterate	114	50.9	62	54.3	0.81
Primary school	66	29.5	37	56.1	
Higher than primary	44	19.6	23	52.3	
<b>Place of residence</b>					
Rural	98	43.7	48	48.9	0.14
Urban	126	56.3	74	58.7	
<b>Language at home</b>					
Turkish	58	25.9	29	50	0.29
Kurdish	114	50.9	67	58.8	
Arabic	52	23.2	26	50	
Total	224	100	122	54.5	

onal method for her infant with jaundice. The most common three languages used at home were Turkish by 28.9%, Kurdish by 50.9% and Arabic by 20.2% and the use of traditional methods among these groups were 50%, 58.8% and 50% respectively. There was no significant difference between the groups and their usage of traditional methods with regard to age, education level, language and place of residence.

In Table 3, the traditional methods used by the mothers were listed. Overall, 122 mothers (54.5%) declared that they had used traditional methods such as sun exposure (6.5%), cutting the infant's

post auricular area (11.4%), puncturing the infant's earlobe (6%), giving herbal teas (16.3%), burning the infant's body (4.9%) (Figure 1) and painting the infant's body (6.5%) (Figure 2). Even if they had not applied the method, most of them had heard about them with sun exposure and putting yellow cloths on the infant's face or bed being the most well known ways of traditional healing (83.9% and 76.8%, respectively). Invasive methods like cutting the infant's post auricular area (57.1%), puncturing the infant's earlobe (27.7%), and cutting the infant's palate (23.2%) were the other methods most commonly known by mothers.

**TABLE 3:** Traditional healing methods for jaundice used or known by 224 mothers with a hospitalized infant with jaundice.

	Used methods n: 122		Heard about methods n: 224	
	n	%	n	%
1. Exposing the infant to sunshine	8	6.5	188	83.9
2. Cutting the infant's post auricular area	14	11.4	128	57.1
3. Puncturing the infant's earlobe	6	4.9	62	27.7
4. Putting yellow cloths on the infant's face or bed	14	11.4	172	76.8
5. Giving herbal teas to the infant	20	16.3	88	39.2
6. Giving sugary water to the infant	30	24.5	114	50.8
7. Cutting the infant's palate	6	4.9	52	23.2
8. Burning the infant's body	6	4.9	68	30.3
9. Painting the infant's body	8	6.5	96	42.8



**FIGURE 1:** Burning body parts of the neonate with jaundice.



**FIGURE 2:** Painting face of the neonate with jaundice.

The majority of the mothers (83.9%) stated that jaundice was a very important life-threatening disease (Table 4). However, 22.3% of the mothers indicated that neonatal jaundice was common in infants and there was no need to worry. Most of the mothers believed that events during pregnancy such as fear or sadness or drug usage might cause jaundice. There was also the belief that jaundice might arise from insufficient liver function in the infant. It was stated by 83.9% of the mothers that infants with jaundice should be breastfed.

## DISCUSSION

This study describes the use of traditional healing methods by mothers of infants with jaundice. Our

data showed that mothers commonly used traditional methods. Seven types of traditional methods were recognized and some of them were harmful, invasive methods such as cutting the infant's posterior auricular area or palate. Traditional methods should be well defined and considered as part of cultural beliefs. However, when they are harmful to patients they should be clearly rejected and health education or other interventions should be practiced in the community.

In many communities, the traditional remedy of herbal tea has been used for jaundice treatment.<sup>6,10</sup> Some of these herbal teas may cause hemolysis because of G6PD deficiency, but in our study, mothers gave infants coffee or black tea, which may not cause such complications. However, other harmful, invasive methods were recognized and those methods were not common in other communities. Cutting the infant's post auricular area is a well-known practice in the region.

Recent changes in healthcare practices, including the early discharge of newborns, have trans-

	n	%
Jaundice is a very important life-threatening disease	188	83.9
<b>Why does jaundice occur?</b>		
It is common (normal) in all infants	50	22.3
Fear or sadness of mother during pregnancy	46	20.5
Drugs that mother used during pregnancy	14	6.3
Wrong nutritional habits of mother	14	6.3
Insufficient function of infant's liver	24	10.7
Bad hygiene at home	6	2.7
<b>What effect may jaundice have on the infant?</b>		
Death	36	16.1
Disabilities	26	11.6
Damage to the ear	14	6.3
Liver disease	24	10.7
Brain damage	30	13.4
Problems of growth	12	5.4
I don't know	82	36.5
<b>How should an infant with jaundice be fed?</b>		
Breastfeeding	188	83.9
Sugary water	10	4.5
I don't know	26	11.6

formed the management of neonatal jaundice an outpatient practice. Clinicians should advise mothers to nurse their infants at least 8 to 12 times per day for the first few days.<sup>11</sup> Unfortunately, visual inspection of jaundice has been reported to be an unreliable indicator of the severity of hyperbilirubinemia.<sup>12</sup> In our study, some mothers recognized jaundice in their infants or applied some traditional methods, but despite this, they did not seek professional advice nor were they inclined to take healthy infants to health professionals. Our study showed that it would be better to advise mothers to take infants to healthcare centers immediately after jaundice had started and follow-up home visits should be planned as early as possible.

The prevalence of inappropriate maternal beliefs about therapeutic sun exposure in infancy period was 36% to 62%.<sup>8,13</sup> Exposing children to sunshine was also a traditional method used or known by mothers. According to our observations, this behavior may have been derived from or sustained by health staff.

The factors affecting the use of folk remedies were the education level of the mother, ethnicity, low socio-economic status, lack of access to healthcare services, and mistrust to the physicians' practices.<sup>14,15</sup> In our study, there was no significant difference between subgroups of mothers in their use of traditional methods. This result may be because there are no inequalities for access to healthcare services for different ethnic groups or subgroups in the region. Our study sample was not large enough to reflect the regional structure on this subject and this was not the aim of the study. We only aimed to define traditional healing methods.

Mothers expressed concerns about neonatal jaundice and perceived it as a serious condition. Some

had misconceptions about the cause and outcomes of NNJ, with many worried about the short and long-term effects. Healthcare staff need to address these misconceptions and concerns and they should inform mothers about the causes, outcomes and treatment of NNJ. Not only in our study, but also in many other studies it has been shown that mothers need communication regarding on issue.<sup>16</sup> Mothers of jaundiced infants have been shown to be more likely to stop breast-feeding in the first month of life.<sup>17</sup> The level of encouragement from medical professionals toward breastfeeding had the strongest effect on feeding decisions. Maternal reaction to and taking information from their physicians also played an important role.<sup>18</sup> In our study group, very few mothers stopped breastfeeding, which may be due to the fact that our study was conducted in a Baby Friendly Hospital. The Hospital was certified by UNICEF as a Baby Friendly Hospital and the medical professionals there provide information and encouragement to breastfeed.

The limitations of this study include not reflecting the use of traditional methods to the geographic region. This study was limited to hospitalized infants and we were not able to demonstrate all the folk remedies used for jaundice. Future studies should evaluate the use of folk remedies among children with jaundice or other specific conditions.

## CONCLUSIONS

Our study revealed some harmful traditional healing methods and these should be well, addressed in a non-judgmental manner. Health professionals should offer follow-up visits, while acknowledging and validating the mother's concerns regarding the illness.

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