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Original Article

Knowledge and Health-Seeking Practices of Mothers Attending Primary Health-Care Centers in Baghdad Al-Karkh Sector about Danger Signs in Newborns

Hiba Naji Abdulrida, Reem Jameel Hassan, Mary Mohammed Sabri
Al-Salam Primary Health Care Center, Ministry of Health, Baghdad, Iraq

Abstract

Background: High-risk neonate defines as one who requires more than the standard monitoring and care offered to a healthy term newborn infant; therefore, early detection of neonatal illness is an important step toward improving newborn survival. **Objectives:** The objective of this study is to assess the knowledge and health-seeking practices of mothers attending primary health-care centers about WHO recognized danger signs in newborns. **Subjects and Methods:** A cross-sectional study was carried out in primary health-care centers selected conveniently in Baghdad-Alkarkh district. Participants were 275 mothers of child-bearing age group selected conveniently; the data were collected during the period from March 1 to June 30, 2017. A general questionnaire used for the data collection. **Results:** About 81% of mothers in study sample listed three or more of the who recognized danger signs. About 71.7% of mothers tend to seek advice or treatment for the illness outside the home. The proportion of good knowledge and health-seeking practices was higher in (Educated, employee, mothers who had a history of antenatal care attendance with higher number of visits). There was no relationship between number of children and family support with seeking care outside the home. Mothers who had good knowledge of danger signs of their babies tend to seek care from health facilities more frequently 75%, and this relation was statistically significant, 61.2% of mothers who perceive illness in newborns delayed seeking advice or treatment outside the home, 66% not taking newborn to the health facilities because they expect self-resolution of the illness. There is good knowledge and perception of mothers toward some danger signs such as fever, poor feeding, and jaundice while fair toward others such as cold body, chest indrawing, and signs of local infections. **Conclusion:** There are good knowledge and perception of mothers about the WHO recognized danger signs in newborns; however, there is a gap between mothers' knowledge and their health-seeking behavior for sick newborn and explored their deep perceptions, constraints, and various treatments.

Keywords: Danger signs, health-seeking practices, knowledge, mothers, newborns

Introduction

The neonatal period is the first 28 days after birth; it is highly vulnerable time for neonate who is completing many of physiological adjustments required for extrauterine existence. The high morbidity and mortality rates attest to the fragility of life during this period.[1,2] It represents the time of the highest risk to the infant. About 65% of all deaths that occur in the 1st year of life occurs during this 4-week period.[3] Highlighting urgent need to introduce health interventions to improve essential neonatal care and effective treatment for neonatal conditions.[4] Neonatal morbidity and mortality are still high in developing countries and is due to primarily to negligence of female health, malnutrition, deliveries by unskilled personnel, and poor antenatal care (ANC).[5] Different tools to facilitate the identification of these health problems and reduce neonatal mortality have been introduced into health programs in several countries.

The WHO in 2013 strongly recommended specific danger signs that should be assessed during each postnatal care contact and the newborn should be referred for further evaluation if any of the signs are present. The danger signs are as follows;

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Address for correspondence: Dr. Mary Mohammed Sabri, Al-Salam Primary Health Care Center, Ministry of Health, Baghdad, Iraq.
E-mail: marysabri2017@yahoo.com

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1-stopped feeding well, 2-history of convulsions, 3-fast breathing (breathing rate >60/min), 4-severe chest in-drawing, 5-no spontaneous movement, 6-fever (temperature >37.5°C), low body temperature <35.5°C), and 7-jaundice in first 24 h of life, or yellow palms and soles at any age.[6] Appropriate care seeking is of particular importance in areas where access to health services is limited because in these areas mothers and caregivers would benefit most from being able to discern which episodes require care at a health facility, and which can be successfully treated at home. Appropriate care seeking requires that a household recognizes when a child is ill, can interpret when an illness needs to be treated outside the home and seeks timely and appropriate medical care.[7]

Mothers must be aided in understanding their crucial role in maintaining good health during pregnancy and the health of their infant after birth and must be empowered and equipped to seek and obtain appropriate care for themselves and their newborns.[8]

This study aims to assess the knowledge and health-seeking practices of mothers attending primary health-care centers in Baghdad Al-karkh sector about danger signs in newborns.

Subjects and Methods

A descriptive cross-sectional study of (288) mothers eligible to participate in the current study. Two hundred and seventy-five were interviewed who were mothers of child-bearing age group selected conveniently in primary health-care centers while 13 mothers refused to participate in the study.

The data collection was conducted during the period (March 1–June 30, 2017) in 5 primary health centers conveniently selected in Al-Karkh district in Baghdad. The centers were as follows: AL Mansour PHCC, AL Sabiat PHCC, AL Zahraa PHCC, AL Salam PHCC, and AL Iraq al jadeed PHCC. Data were collected using a specially designed questionnaire, direct interview with the mothers visiting the primary health-care centers at the time of the study were asked to answer this questionnaire. The questionnaire includes questions about:

- Sociodemographic variables (age, education, employment, parity, ANC, and family support)
- knowledge of mothers about danger signs in newborns(feeding problem, indrawing of chest, fast breathing, fever or very low body temperature, convulsion, jaundice, and signs of local infection)
- Health-seeking practices after perceiving danger sign in newborn (intervention or treatment for this illness at home and seek advice or treatment for illness outside the home).

The statisticl analysis was performed using SPSS (statistical package for social sciences) version22 and Microsoft Excel. Means, standard deviation Microsoft Excel and frequencies were calculated. The data presented as frequency and percentage tables, pie and bar charts were used also. A chi-square test of significance of association was performed to assess relations between categorical variables. A level of $P < 0.05$ was considered as significant.

Results

In the current study, the distribution of mothers according to their sociodemographic characteristic including their age (most of them at aged 26–36 years, 42.2%), education (highest rate of higher education, 33.8%) employment (mostly house wives 69.8% while employee only 30.2%), most of the mothers had <4 children 62.2%, there were 89.1% mothers had positive history of ANC attendance, also 52.7% of mothers had 4 or more visits, of the total 275 mothers 72.7% had family support as shown in Table 1.

All of the mothers listed correctly at least one of the WHO recognized danger signs, 81% of mothers had knowledge of three or more neonatal danger signs (good knowledge of the danger signs) as shown in Figure 1.

In the current study, five danger signs were correctly listed by 22.9% of mothers, 4 danger signs were correctly listed by 20.4% of mothers, and 6 danger signs were correctly listed by 19.3% of mothers, as shown in Table 2.

Concerning the WHO recognized danger signs, feeding difficulty at birth 85.1%, fever 73.8% mothers, move only

Table 1: Distribution of study sample by sociodemographic characteristics

Characteristics of the mothers	Frequency (%)
Age groups (years)	
15-20y	30 (10.9)
21-26	47 (17.1)
26-36	116 (42.2)
37-41	60 (21.8)
42-49	22 (8.0)
Education level	
Illiterate	41 (14.9)
Finished primary	91 (33.1)
Secondary	50 (18.2)
Higher	93 (33.8)
Employment	
Homemaker	192 (69.8)
Employee	83 (30.2)
Parity	
<4	171 (62.2)
4	104 (37.8)
ANC	
Yes	245 (89.1)
No	30 (10.9)
Number of ANC	
<4	116 (47.3)
4	129 (52.7)
Family support	
Yes	200 (72.7)
No	75 (27.3)

ANC: Antenatal care

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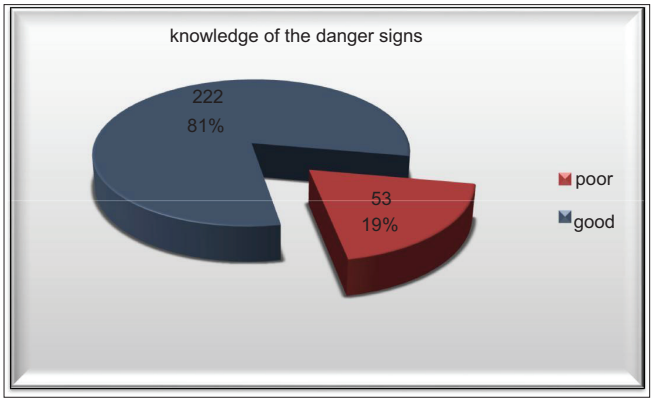

Figure 1: Distribution of the mothers according to their knowledge of danger signs

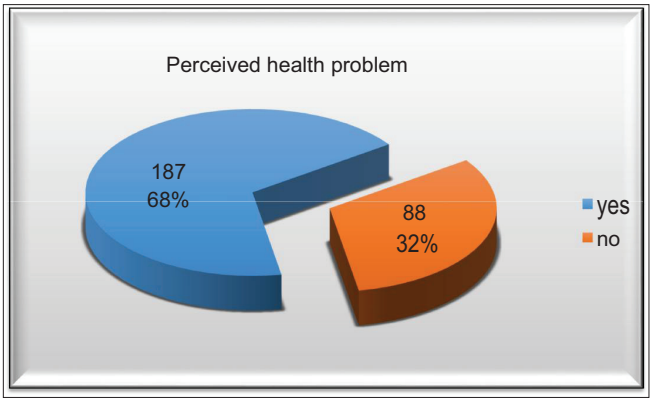

Figure 2: Distribution of the mothers according to their health problem perception

Table 2: Distribution of the mothers according to the number of World Health Organization recognized danger signs

Number of WHO recognized danger	Frequency (%)
9	2 (0.7)
8	4 (1.5)
7	27 (9.8)
6	53 (19.3)
5	63 (22.9)
4	56 (20.4)
3	17 (6.2)
2	46 (16.7)
1	7 (2.5)
Total	275 (100)

WHO: World Health Organization

Table 3: Distribution of the mothers according to the World Health Organization recognized danger signs of their babies

WHO recognized danger signs	Frequency (%)		
	Yes	No	Don't know
Feeding difficultyat birth	234 (85.10)	6 (2.2)	35 (12.7)
Fever	203 (73.80)	12 (4.4)	60 (21.8)
Move only when stimulated	183 (66.5)	30 (10.9)	62 (22.5)
Jaundice	176 (64)	36 (13.1)	63 (22.9)
Fast breathing	163 (59.3)	3 (1.1)	109 (39.6)
Convulsion	161 (58.5)	21 (7.6)	93 (33.8)
Sever chest in drawing	49 (17.8)	5 (1.0)	221 (80.4)
Signs of local infection	39 (14.20)	156 (56.7)	80 (29.1)
Very low temperature	38 (13.80)	137 (49.8)	100 (36.4)

WHO: World Health Organization

when stimulated 66.5%, and jaundice 176 (64%) were the most frequent signs recognized as danger signs by the mothers. Others mentioned in Table 3.

Of the total mothers participated in current study 68% mothers perceived health problem or serious illness in the 1st month after delivery in current baby or previous babies, as shown in Figure 2.

Regarding to the health problem that perceived by the mothers in the 1st month after delivery in current baby, the most frequent health problem that perceived by mothers was fever 44 (23.5%), followed by jaundice 37 (19.7%) mothers, and the least frequent health problem that perceived by mothers was cold body and cyanosis, which was found in 5 (2.7%), as shown in Figure 3.

Among all danger signs, fever had the highest frequency of seeking care or treatment outside the home as shown in Table 4.

Among the 134 mothers who seeking advice or treatment outside the home, the most frequent health facilities included governmental hospital or primary health-care centers 74 (55.2%) mothers, and the least one was other sources (traditional healer) practiced by 7 (5.2%) mothers, as shown in Figure 4.

About 82 (61.2%) of the total mother in the study seeking advice or treatment outside the home, 34 (25.4%) mothers presented to the health facilities <24 h after recognition of the danger signs, 18 (13.4%) mothers do not know the time of presentation of their babies to the health facilities as shown in Figure 5.

Among the 53 mothers who did not seeking advice or treatment outside the home, the most causes for not taking newborn to the health facilities included, expect self-resolution of the illness 35 (66%) followed by lack of knowledge signs 27 (50.9%), the least frequent reason was health facility too far and did not trust facility/poor quality care which founded in 6 (11.3%) mothers, and 3 (5.7%) mothers had no reason as shown in Table 5.

In the present study measure the association between mother's characteristic and their knowledge of danger signs of their children, the association was statistically significant were mothers age group of 26–36 years, with higher education, employee, had history of ANC attendance, mothers had more than 4 visits and had family support (88.8%, 96.8%, 98.8%, 84.3%, 95.3% and 84.5% respectively) and ($P < 0.001$) Table 6.

Table 7 shows the association between mother's characteristics and seeking care outside the home, age group

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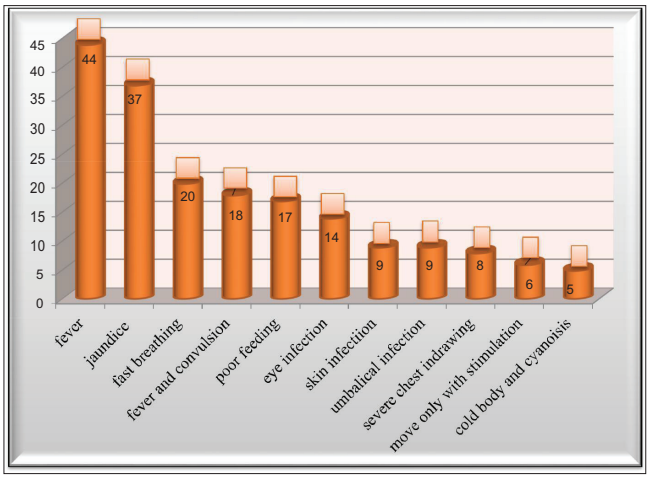

Figure 3: Distribution of the mothers according to the health problems that perceived by them

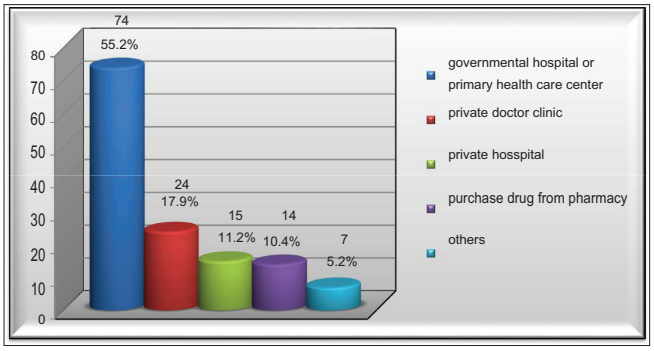

Figure 4: Distribution of mothers according to the source of health seeking or treatment for their babies $n = 134$

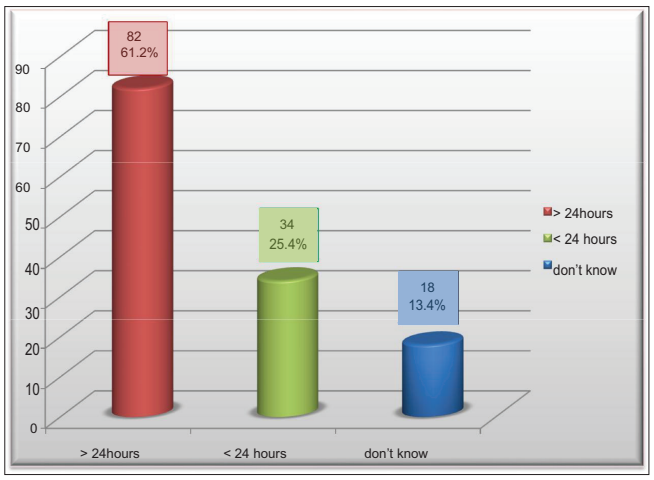

Figure 5: Distribution of mothers according to the time during which they presented their babies for seeking health or treatment $n = 134$

of 37–49 years tend to seek care from health facilities more frequently 59 (92.2%) mothers, this relation was statistically significant ($P < 0.001$).

A mother who completed higher education tends to seek care from health facilities more frequently 47 (88.7%) mothers, and this relation was statistically significant ($P \leq 0.001$). Employee mothers 48 (88.9%) seek care from health facilities more than homemaker mothers, and this relation was statistically significant ($P = 0.001$). Mothers who had a history of ANC attendance 122 (74.8%) seek care from health facilities more than who not had a history of ANC attendance, and this relation was statistically significant ($P = 0.012$). Mothers who had four visits seek care from health facilities more frequently 79 (83.2%) and this relation was statistically significant ($P = 0.004$). Mothers who had good knowledge of danger signs of their babies tend to seek care from health facilities more frequently 114 (75%) and this relation was statistically significant ($P = 0.035$).There was no relationship between the number of children and family support with seeking care outside the home.

Discussion

In the current study, it was found that the majority of participants at the age group of participants were (26–36 years) about 42.2%, this is similar to study in Ghana[9] and study in Iran.[10] This is not surprising because it appears to be the active reproductive and child-bearing age among women.

Regarding educational level, a study in Iran[10] and a study in Yemen[11] found that illiterate mothers were 24% and 27%, respectively, while in this study, only 14.9% of mothers were illiterate.

A study in Iran[10] and Pakistan[8] found, respectively, that 20.9%, 22% of mothers were higher or academic education while in this study, 33.8% were higher educated which reflect good level of education among the sample of this study.

Regarding employment in Pakistan[8] and Bangladesh[12] there is high level of homemakers among mothers 96% and 72%, respectively, while in this study, about 69.8% were homemakers which also considered high percentage, this may be related to the difficult circumstances of the country.

The current study found that mothers of good knowledge about danger signs (mothers who mentioned at least three-danger sign) was 81% which is higher than the level 18.2% reported in North West of Ethiopia[13] and higher than study conducted in Kenya[14] that reported 15.5% of the mothers had high level of knowledge. All mothers recognized at least one danger sign which is similar to study in Ethiopia[15] which showed that the knowledge of mothers about the symptoms of neonatal illness was very high (all respondent was aware of at least one symptom) while a study done in Bangladesh.[12] In which, there were about 51% of mothers able to identify one danger sign. In Ghana,[9] it was found that 28.1% of mothers mentioned only up to 3 danger signs, while in this study only 19% had poor knowledge (mention ≤3 danger signs).

In present study, the most common recognized danger sign was feeding difficulty at birth 85.1% because feeding difficulty is an alarming sign and difficult to miss and easily detected, especially by educated mothers and sometimes

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Table 4: Distribution of the mothers according to the health problems because of which they seeking advice outside the home

Perceived health problem	Frequency (%)	Seeking advice or treatment for the illness outside the home, frequency (%)
Fever	44 (23.5)	28 (63.6)
Jaundice	37 (19.7)	18 (48.6)
Fast breathing	20 (10.7)	18 (90)
Fever and convulsion	18 (9.6)	18 (100)
Poor feeding	17 (9.1)	16 (94.1)
Eye infection	14 (7.5)	4 (28.6)
Skin infection	9 (4.8)	7 (77.8)
Umbilical infection	9 (4.8)	6 (66.7)
Severe chest indrawing	8 (4.3)	8 (100)
Move only with stimulation	6 (3.3)	6 (100)
Cold body and cyanosis	5 (2.7)	5 (100)
Total	187 (100)	134 (71.7)

Table 5: Distribution of the mothers according to the causes that make them not seeking care outside the home

Causes of not seeking care for neonate outsidethe home (n=53)	Frequency* (%)
Expect self-resolution of the illness	35 (66.00)
Lack of knowledge signs	27 (50.90)
High cost of treatment	17 (32.10)
Lack of decision autonomy to seek care	14 (26.40)
Health facility too far	6 (11.30)
Didn't trust facility/poor quality care	6 (11.30)
No reason	3 (5.70)

*Some mothers give more than one reason

the only sign present, followed by fever 73.8%, while a study done in Yenagoa Metropolis[16] reported that the most common recognized danger signs were fast breathing 45.2% and convulsion 39% which is lower recognition rate than the current study regarding the danger signs of the fast breathing 59.30% and convulsion 58.50%.

A study done in Bangladesh[12] reported that knowledge of fever was the most commonly known danger sign 65% which is lower than rate of fever recognition as a danger sign in the current study 73.80%.

A study done in Yemen[11] documented that 57.5% of the are takers perceived the illnesses as severe, but only 15.6% of them took their children for medical care during the 1st day of illness. While the present study documented that 68% mothers perceived serious illnesses in the 1st month after delivery in their baby, 25.4% of them took their children for medical care during the 1st day of illness. A popular belief that a patient has to be very ill to warrant taking him or her to the hospital as well as the reliance on traditional healers and the preference for trying self-medication before consulting medical professionals.[11] In this study, the cause of delay seeking medical advice due to pluralistic care seeking practices and high percentage of mothers (mainly higher educated) claimed to know how to deal with the illness before seeking for medical advice.

A study done in Yemen[11] reported regarding disorder characteristics, caretakers were more likely to seek medical treatment when a child experienced difficulty of breathing while the current study found that the most common problem that made mothers seeking advice outside the home was fever 59.1% this resemble what was found by a study conducted in Kenya.[17]

In study done in Pakistan[8] reveals that 69.4% had taken their children to private doctors and only 11.7% sought care from government doctors in contrast to current study which found that 17.9% of the mothers had taken their children to private doctors and 55.2% sought care from government hospitals or primary health-care centers. This difference might be reflecting of good governmental health facilities in our country that provided by doctors and medical staff in hospitals and primary health-care centers.

A study conducted in Nigeria[18] concluded that 76.8% of the mothers who seeking advice or treatment outside the home. For those who did 45% seek advice and treatment more than 24 h after recognition of the danger signs. About one in four 23% did not present to the hospital at all following the delays at the household level. This delay will inadvertently result in late presentation to health facilities and subsequent late administration of appropriate interventions resulting in mortality.

The current study revealed that 61.2% of the mothers seeking advice or treatment outside the home to health facilities more than 24 h after recognition of the danger signs and about 13.4% did not present to the health facilities at all following the delay.

A study conducted in Yemen[11] concluded that the main reason for not seeking medical care in the current study was the illness was mild. The next common reason was illness is not for medical treatment This pointed to the traditional illness concepts of childhood symptoms, which are believed to be a result of nonmedical mechanisms and preferably treated by traditional healers or home remedies, in the present study found that the most frequent reasons

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Table 6: Relationship between mothers' characteristics and knowledge of danger sign of their children

Mothers characteristics	Knowledge of danger signs		*P*
	Good	Poor	
Age group (years)			
15-25	48 (62.3)	29 (37.7)	<0.001*
26-36	103 (88.8)	13 (11.2)	
37-49	71 (86.6)	11 (13.4)	
Educational level			
Illiterate	23 (56.1)	18 (43.9)	< 0.001*
Primary	64 (70.3)	27 (29.7)	
Secondary	45 (90.0)	5 (10.0)	
Higher	90 (96.8)	3 (3.2)	
Occupation			
Homemaker	140 (72.9)	52 (27.1)	<0.001*
Employee	82 (98.8)	1 (1.2)	
Parity			
4	87 (83.7)	17 (16.3)	0.337 (NS)
<4	135 (78.9)	36 (21.1)	
ANC attendance			
Yes	207 (84.5)	38 (15.5)	<0.001*
No	15 (50.0)	15 (50.0)	
Number of visits			
4	123 (95.3)	6 (4.7)	<0.001*
<4	84 (72.4)	32 (27.6)	
Family support			
Yes	169 (84.5)	31 (15.5)	0.01*
No	53 (70.7)	22 (29.3)	

*Measure the significant association (P<0.05), NS: Nonsignificant association, ANC: Antenatal care

Table 7: Relationship between mothers' characteristics and seeking care for their babies outside the home

Mothers characteristics	Seeking care outside the home		*P*
	Yes	No	
Age group (years)			
15-25	31 (62)	19 (38)	<0.001*
26-36	44 (60)	29 (39.7)	
37-49	59 (92.2)	5 (7.8)	
Educational level			
Illiterate	11 (40.7)	16 (59.3)	<0.001*
Primary	45 (69.2)	20 (30.8)	
Secondary	31 (73.8)	11 (26.2)	
Higher	47 (88.7)		
Occupation			
Homemaker	86 (64.7)	47 (35.3)	0.001*
Employee	48 (88.9)	6 (11.1)	
Parity			
<4 children	75 (72.8)	28 (27.2)	0.697 (NS)
4 children	59 (70.2)	25 (29.8)	
ANC attendance			
Yes	122 (74.8)	41 (25.2)	0.012*
No	12 (50.0)	12 (50.0)	
Number of visits			
<4	43 (63.2)	25 (36.8)	0.004*
4	79 (83.2)	16 (16.8)	
Family support			
Yes	99 (89.2)	12 (10.8)	0.39 (NS)
No	35 (46.1)	41 (53.9)	
Knowledge of danger signs (n=187)			
Poor	20 (57.1)	15 (42.9)	0.035*
Good	114 (75.0)	38 (25.0)	

*Significant association (P<0.05), NS: Nonsignificant association. ANC: Antenatal care

for not taking newborn to the health facilities given by the respondents included expect self-resolution of the illness 66% mothers followed by lack of knowledge signs 50.9% while a study done in India[19] reported that the most frequent reasons for not taking actions even in the presence of danger signs/symptoms were ignorance of parents, lack of money, followed by faith in supernatural causes, nonavailability of transport, and home remedy.

A study done in Bangladesh[12] found that middle, high education, and increased parity was associated with the knowledge of key newborn danger signs among the participants which are similar to current study except about parity, current study showed there was no association between parity and knowledge of danger signs. Although increase parity leads to increase maternal awareness about neonatal illnesses, in this study, majority of the mothers 85% were educated, and about 1/3 were employee, so they had good interest and knowledge about family planning. While the study conducted in Laos[20] agree with current study in the fact that brief antenatal education increases mothers' understanding of basic newborn care. This reflects good and effective antenatal program in Iraq and especially in primary health-care centers where the current study was conducted.

The current study found that educated employee mothers and mothers who had a history of ANC attendance and especially who had 4 visits, mothers who had good knowledge of danger signs of their babies are more likely seek care in health facilities.

A study conducted in Nigeria[18] revealed that knowledge of at least one danger sign in the newborn considerably increased the likelihood of mother to seek care in health facilities; this is hardly surprising as knowledge of signs signifying imminent danger will in many cases logically evoke a quicker response to seek health-care services, consequently increasing the chances of child survival. These entire conclusions were comparable with the current study.

Conclusions

There is good knowledge of mothers about WHO danger signs. Increase maternal age, educational level, and ANC attendance and number of visits increase the level of maternal knowledge and health-seeking practices. Despite good knowledge in high percentage of educated mothers, there is inappropriate health-seeking practices in some of them.

The study recommends the role of medical staff in hospitals or primary health-care centers by educate mothers how to recognize

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neonatal danger signs, give mothers lessons about care of the newborn after delivery regarding feeding, bathing, warming, and immunization to avoid morbidities and mortalities which occurs commonly in neonatal period and discuss to them proper way and time for health-seeking practices after perceive illness in their newborns, increase awareness of pregnant and young adolescent mothers about the importance of prenatal, natal, and postnatal care and visits to PHC centers and the importance of mother-child health booklet in the documentation and follow up.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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