

## Mothers' Awareness Regarding Home Care Management of a Preterm Baby at the Rapareen Pediatric Teaching Hospital in Erbil City.

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### ABSTRACT

**Background and objectives:** Preterm birth is a global health issue that occurs in every country. Every year, 15 million preterm infants are born worldwide, and one out of ten is a preterm infant. Sixty percent of preterm infants are born in developing countries. This study aimed to assess mothers' awareness regarding home care management of a preterm baby at the Rapareen Pediatric Teaching Hospital in Erbil in the Kurdistan Region of Iraq.

**Method:** A quantitative, descriptive, cross-sectional study was carried out in the Neonatal Intensive Care Unit at the Rapareen Pediatric Teaching Hospital in Erbil from the 7th of October 2018 to the 15th of October 2019. A purposive, non-probability sampling technique was used, and 130 mothers were respectively recruited to the study. A questionnaire was developed by the researcher and the research data were collected by direct, face-to-face interviews. Descriptive statistics in the form of frequencies, percentages, and inferential chi-square test were used to analyze the data.

**Results:** More than half (53.8%) of the mothers were 25-33 years old and the majority (77.7%) of them were housewives. The main finding of the study is that most mothers had a neutral level of awareness regarding thermoregulation, breastfeeding, vaccinations, and recognizing danger signs. At the same time, most of the mothers were not aware of the infection prevention, and there was a very high, statistically significant association between mothers' awareness regarding thermoregulation and occupation and a type of family. Furthermore, there was a statistically significant association between the mothers' awareness regarding breastfeeding and their residency and a type of delivery, and a statistically significant association between the mothers' awareness regarding infection prevention and their occupation and economic status. Finally, there was a statistically significant association between the mothers' awareness of vaccinations and their age and the type of delivery, and there was a statistically significant association between the mothers' awareness about the danger signs and the economic status.

**Conclusion:** The study concluded that mothers who have a preterm baby at the Rapareen Pediatric Teaching Hospital in Erbil have poor awareness regarding the care of their babies at home.

**Keywords:** Preterm babies; Mothers; Homecare; Awareness; Rapareen; Erbil

*Received: 2/8/2019*

*Accepted: 13/10/2019*

*Published: 30/11/2019*

### INTRODUCTION

World Health Organization (WHO) states that the preterm baby is a baby born alive before 37th week of pregnancy is completed, or an infant's birth before the 37th

week after the first day of the last menstrual period [1]. The preterm babies are divided into three sub-categories based on gestational age: an extremely preterm baby (<28 weeks), very preterm baby

(28 to <32 weeks), and moderate to late preterm baby (32 to <37 weeks) [2]. Every year 15 million babies are born prematurely and their possibility for life differs dramatically around the world. For example, in countries with high income, about 1.2 million preterm babies were registered [3]. In 2010, more than 60% of preterm babies were born in Sub-Saharan Africa and South Asia. The countries with the highest numbers of preterm births include Brazil (9.2%), the United States of America (12%), India (13%) and Nigeria (12.2%), demonstrating that the preterm birth is a global problem. The rate of preterm births in Iraq, Iran, and Turkey is 6.5%, 11.5%, and 11.9% respectively [4]. The cause of more than half of the preterm births is idiopathic, but some maternal health conditions like pre-eclampsia, gestational diabetes mellitus, polyhydramnios, and maternal chronic conditions like hypertension and diabetes are also related to preterm birth [5]. About 30–35% of preterm births are related to medical or obstetric complications, 40–45% of them are due to spontaneous preterm labour, and 25–30% of preterm births are caused by a preterm pre-labour rupture of membranes (PPROM) [6]. More than 85% of newborn deaths are related to the complications of prematurity, and neonatal infections and complications of prematurity are currently the second leading cause of death [7]. Complications of preterm labour are divided into two categories: short-term and long-term complications. The short-term complications include breathing problems, brain problems, and premature immune system problems when babies are born too soon and are more susceptible to infection. The long-term complications of preterm labour include cerebral palsy, impaired cognitive skills, behavioural and psychological problems, and chronic health issues such as asthma and feeding problems [8]. Several medical strategies based

on the research evidence are used to prevent preterm birth such as progesterone supplementation, cervical cerclage and maternal education regarding avoiding cigarette smoking and alcohol [9]. Home care management refers to the care of children with simple or complex health problems and their families in their places of residence for the aims of promoting, maintaining, or restoring health, or for boosting the level of independence while decreasing disability and illness. Some children with multiple health problems after discharge from a hospital need more specific care at home to prevent re-admission [10]. Although all babies need appropriate home care after birth, premature babies are especially susceptible to temperature irregularities, feeding difficulties, low blood sugar level, infections and breathing difficulties. Mothers should be aware of and be able to provide care for their preterm babies at home such as thermal care by wrapping and drying baby, covering baby's head, providing skin-to-skin care, giving breast milk, which is important for a preterm baby nutritionally, immunologically and developmentally. Premature babies have a higher risk of bacterial sepsis, which is why mothers should be aware of and continually do basic hygienic practices such as hand washing, maintaining a clean environment and visiting restrictions, and assessing for general danger signs of illness [11]. This study aimed to assess mothers' awareness regarding home care management of a preterm baby regarding thermoregulation, feeding, immunization, infection prevention, and danger signs at the Neonatal Intensive Care (NICU) Unit in Erbil, and to find out the association between home care management, mothers' awareness and selected socio-demographic characteristics.

## METHODS

A quantitative, cross-sectional, descriptive study was carried out to assess the awareness of mothers who attended the NICU at the Rapareen Pediatric Teaching Hospital (RPTH) in Erbil. The mothers were asked to participate in the study about the home care management of a preterm baby in terms of thermoregulation, feeding, immunization, infection prevention, and danger signs. The data collection lasted from the 7th of October 2018 to the 15th of October 2019. A non-probability purposive sample of 130 mothers was recruited to participate in the study using a formula which was developed by Taro Yamane in 1967 (, , n=115) [39]. In this formula, n = the sample size, N= the size of the population (RPTH's reported number of admissions of preterm infants every month was 40 so the estimated population for four months was 160), e= the alpha-error of 0.05. The target population consisted of mothers who delivered premature babies. Preterm babies who received home care management by mothers at home were included in the study, while orphan children whose mother died, mothers with psychological problems, babies with congenital anomalies, or who were admitted to the NICU from the labour room were excluded from the study. After the calculation of the sample size using the Yamane formula, the researcher considered 115 cases of mothers as a sample size. In order to obtain reliable data, the researcher has increased the sample size to 130 cases. The data were gathered through a direct interview (face-to-face) using the questionnaire, which was prepared by the researcher. Each interview session took approximately 30-45 minutes. The questionnaire contained two main parts. The first part, the socio-demographic characteristics, included the mother's demographic characteristics

such as the age of the mother, marital status, occupation, level of education, religion, type of family, economic status, and type of delivery. The second part contained an assessment of maternal awareness regarding preterm baby home care. A three-point Likert Scale was used (0 for not awareness, 1 for neutral awareness, and 2 for awareness) and consisted of 31 items. The calculation of overall mothers' awareness was categorized into three groups: poor awareness (0-20), fair awareness (21-41), and good awareness (42-62). The validity of the study instrument was determined through the panel of 15 experts of different specialities. The majority of the experts agreed upon the items of the study instrument. A pilot study was conducted on 15 mothers who were randomly selected. The Pearson correlation(r) was 0.81. Ethical approval was obtained from the Scientific and Ethical Committees of the College of Nursing of Hawler Medical University on 10th June 2019, the Erbil Directorate of Health, Ministry of Health, and the director of RPTH. The verbal permission was obtained from the mothers before starting the interview. The data were analyzed using IBM SPSS Software for Statistical Analysis Version 25, and descriptive statistics (frequency and percentage) were calculated. The inferential statistical analysis (Chi-square and Fisher's exact test) was conducted to find out the association between variables. The p-value was considered statistically significant if it was  $\leq 0.05$ , which indicated a rejection of the null hypothesis.

## RESULTS

A total of 130 mothers were interviewed. The majority, 70 (53.8%) of respondents were between 25-33 of age, and most, 101 (77.7%) were housewives, while 3 (2.3%) were private employees. 43.1% of mothers were illiterate and only 1.5%

had a postgraduate level of education. 43.8% of mothers lived in urban areas. The majority of participants (69.2%) were in a nuclear family. As for the economic status of participants, results showed that more than half (63.1%) had sufficient income for daily needs, and in 12.3% of cases, the income exceeded economic needs. Over one third (46.2%) of mothers delivered their

babies by a Cesarean Section (C\S) (Table1). According to the Table 2, most (66.2%, 70%, 58.5%, and 66.9%) of mothers had neutral awareness regarding thermoregulation, breastfeeding, vaccinations, and danger signs respectively, while 67.7% of participants were completely not aware regarding infection prevention.

**Table 1:** Socio-demographic Characteristics of Mothers. (n=130)

Mothers' Socio demographic characteristics		No.	(%)
<b>Mother's age</b>	16-24	24	(18.5)
	25-33	70	(53.8)
	34-42	36	(27.7)
<b>Occupation</b>	Housewife	101	(77.7)
	Governmental employee	20	(15.4)
	Private employee	3	(2.3)
	Student	6	(4.6)
<b>Level of education</b>	Illiterate	56	(43.1)
	Able to read and write	13	(10)
	Primary school graduate	11	(8.5)
	Secondary school graduate	21	(16.2)
	Institute graduate	12	(9.2)
	College graduate	15	(11.5)
	Postgraduate	2	(1.5)
<b>Residency area</b>	Rural	31	(23.8)
	Urban	57	(43.8)
	Suburban	42	(32.3)
<b>Type of family</b>	Nuclear	90	(69.2)
	Joint	14	(10.8)
	Extended	26	(20)
<b>Economic status</b>	Sufficient for daily needs	82	(63.1)
	Insufficient	32	(24.6)
	Exceeds needs	16	(12.3)
<b>Type of delivery</b>	Normal delivery	49	(37.7)
	Cesarean section	60	(46.2)
	Episiotomy	21	(16.2)
<b>Total</b>		<b>130</b>	<b>(100)</b>

**Table 2:** Assessment of mothers’ awareness regarding preterm baby homecare. (n=130)

Assessment of mothers’ awareness regarding preterm baby homecare	Not aware		Neutral		Awareness	
	F	(%)	F	(%)	F	(%)
Mothers’ awareness regarding thermoregulation	38	(29.2)	86	(66.2)	6	(4.6)
Mothers’ awareness regarding breastfeeding	37	(28.5)	91	(70)	2	(1.5)
Mothers’ awareness regarding infection prevention	88	(67.7)	41	(31.5)	1	(0.8)
Mothers’ awareness regarding vaccination	51	(39.2)	76	(58.5)	3	(2.3)
Mothers’ awareness regarding danger signs	40	(30.8)	87	(66.9)	3	(2.3)

Table 3 shows the association between mothers’ awareness regarding thermoregulation and selected socio-demographic characteristics and demonstrates that there was statistically a very highly significant association between occupation and a family type of mothers and their home care awareness regarding thermoregulation (p - value=0.001). There was no statistically significant association between mothers’ thermoregulation awareness and other socio-demographic characteristics such as the age of mother, level of education, residency, economic status, and type of delivery.

The current study found that there was a statistically significant association between an area of mother’s residency and a type of delivery and their home care awareness regarding breastfeeding with p-value = 0.037 and 0.050 respectively (Table 4).

Table 5 shows the existence of a statistically significant association between mothers’ awareness of infection prevention and their occupation (p-value = 0.037),

and a statistically highly significant association between awareness of infection prevention and their economic status (p-value = 0.004). Our study demonstrated that there was a statistically significant association (p-value < 0.05) between mothers' vaccinations awareness and their age and a type of delivery.

There was no significant association between mothers' awareness of vaccinations and other socio-demographic characteristics such as level of education, occupation, residency, type of family, and economic status (Table 6).

There was only a statistically significant association between mothers’ awareness regarding danger signs and their economic status (p-value = 0.013) (Table7).

**Table 3:** Association between mothers' awareness regarding thermoregulation and selected socio-demographic characteristics.

Thermoregulation (scores)		Not aware		Neutral		Awareness		P-Value
Socio Demographic characteristics		No.	(%)	No.	(%)	No.	(%)	
<b>Mother's age</b>	16-24	8	(33.3)	13	(54.2)	3	(12.5)	<b>0.213</b> <b>NS</b>
	25-33	19	(27.1)	48	(68.6)	3	(4.3)	
	34-42	11	(30.6)	25	(69.4)	0	(0)	
<b>Occupation</b>	Housewife	53	(40.8)	36	(27.7)	12	(9.2)	<b>0.001</b> <b>VHS</b>
	Governmental employee	11	(8.5)	6	(4.6)	3	(2.3)	
	Private employee	3	(2.3)	0	(0)	0	(0)	
	Student	6	(4.6)	0	(0)	0	(0)	
<b>Level of education</b>	Illiterate	16	(28.6)	37	(66.1)	3	(5.4)	<b>0.603</b> <b>NS</b>
	Able to read and write	1	(7.7)	12	(92.3)	0	(0)	
	Primary school graduate	4	(36.4)	7	(63.6)	0	(0)	
	Secondary school graduate	6	(28.6)	13	(61.9)	2	(9.5)	
	Institute graduate	4	(33.3)	8	(66.7)	0	(0)	
	College graduate	7	(46.7)	7	(46.7)	1	(6.7)	
	Post graduate	0	(0)	2	(100)	0	(0)	
<b>Residency</b>	Rural	7	(22.6)	23	(74.2)	1	(3.2)	<b>0.590</b> <b>NS</b>
	Urban	15	(26.3)	39	(68.4)	3	(5.3)	
	Suburban	16	(38.1)	24	(57.1)	2	(4.8)	
<b>Type of family</b>	Nuclear	27	(30)	63	(70)	0	(0)	<b>0.001</b> <b>VHS</b>
	Joint	5	(35.7)	8	(57.1)	1	(7.1)	
	Extend	6	(23.1)	15	(57.7)	5	(19.2)	
<b>Economic status</b>	Sufficient for daily needs	22	(26.8)	57	(69.5)	3	(3.7)	<b>0.202</b> <b>NS</b>
	Insufficient	8	(25)	21	(65.6)	3	(9.4)	
	Exceeds needs	8	(50)	8	(50)	0	(0)	
<b>Type of delivery</b>	Normal vaginal delivery	11	(22.4)	36	(73.5)	2	(4.1)	<b>0.690</b> <b>NS</b>
	Caesarean section	21	(35)	36	(60)	3	(5)	
	Episiotomy	6	(28.6)	14	(66.7)	1	(4.8)	

**Table 4:** Association between mothers' awareness regarding breastfeeding and selected socio-demographic characteristics.

Breastfeeding (scores)		Not aware		Neutral		Awareness		P-Value
Socio Demographic characteristics		No.	(%)	No.	(%)	No.	(%)	
<b>Mother's age</b>	16-24	7	(29.2)	17	(70.8)	0	(0)	<b>0.219</b>
	25-33	24	(34.3)	44	(62.9)	2	(2.9)	
	34-42	6	(16.7)	30	(83.3)	0	(0)	
<b>Occupation</b>	Housewife	29	(28.7)	71	(70.3)	1	(1)	<b>0.331</b>
	Governmental employee	3	(15)	16	(80)	1	(5)	
	Private employee	2	(66.7)	1	(33.3)	0	(0)	
	Student	3	(50)	3	(50)	0	(0)	
<b>Level of education</b>	Illiterate	15	(26.8)	41	(73.2)	0	(0)	<b>0.529</b>
	Able to read and write	3	(23.1)	9	(69.2)	1	(7.7)	
	Primary school graduate	3	(27.3)	8	(72.7)	0	(0)	
	Secondary school graduate	9	(42.9)	12	(57.1)	0	(0)	
	Institute graduate	4	(33.3)	8	(66.7)	0	(0)	
	College graduate	3	(20)	11	(73.3)	1	(6.7)	
	Post graduate	0	(0)	2	(100)	0	(0)	
<b>Residency</b>	Rural	11	(8.5)	18	(13.8)	2	(1.5)	<b>0.037</b>
	Urban	34	(26.2)	21	(16.2)	2	(1.5)	
	Suburban	21	(16.2)	17	(13.1)	4	(3.1)	
<b>Type of family</b>	Nuclear	25	(27.8)	63	(70)	2	(2.2)	<b>0.864</b>
	Joint	5	(35.7)	9	(64.3)	0	(0)	
	Extend	7	(26.9)	19	(73.1)	0	(0)	
<b>Economic status</b>	Sufficient for daily needs	21	(25.6)	60	(73.2)	1	(1.2)	<b>0.340</b>
	Insufficient	13	(40.6)	18	(56.3)	1	(3.1)	
	Exceeds needs	3	(18.8)	13	(81.3)	0	(0)	
<b>Type of delivery</b>	Normal vaginal delivery	14	(28.6)	34	(69.4)	1	(2)	<b>0.050</b>
	Caesarean section	16	(26.7)	43	(71.7)	1	(1.7)	
	Episiotomy	14	(66.7)	7	(33.3)	0	(0)	

**Table 5:** Association between mothers' awareness regarding infection prevention and selected socio-demographic characteristics.

Infection prevention (scores)		Not aware		Neutral		Awareness		P-Value
		No.	(%)	No.	(%)	No.	(%)	
<b>Socio Demographic characteristics</b>		<b>No.</b>	<b>(%)</b>	<b>No.</b>	<b>(%)</b>	<b>No.</b>	<b>(%)</b>	
<b>Mother's age (Years)</b>	16-24	14	(58.3)	10	(41.7)	0	(0)	<b>0.605</b> NS
	25-33	47	(67.1)	22	(31.4)	1	(1.4)	
	34-42	27	(75)	9	(25)	0	(0)	
<b>Occupation</b>	Housewife	72	(71.3)	29	(28.7)	0	(0)	<b>0.037</b> S
	Governmental employee	13	(65)	6	(30)	1	(5)	
	Private employee	2	(66.7)	1	(33.3)	0	(0)	
	Student	1	(16.7)	5	(83.3)	0	(0)	
<b>Level of education</b>	Illiterate	41	(73.2)	15	(26.8)	0	(0)	<b>0.281</b> NS
	Able to read and write	8	(61.5)	5	(38.5)	0	(0)	
	Primary school graduate	7	(63.6)	4	(36.4)	0	(0)	
	Secondary school graduate	16	(76.2)	5	(23.8)	0	(0)	
	Institute graduate	5	(41.7)	6	(50)	1	(8.3)	
	College graduate	10	(66.7)	5	(33.3)	0	(0)	
	Post graduate	1	(50)	1	(50)	0	(0)	
<b>Residency</b>	Rural	24	(77.4)	7	(22.6)	0	(0)	<b>0.386</b> NS
	Urban	34	(59.6)	22	(38.6)	1	(1.8)	
	Suburban	30	(71.4)	12	(28.6)	0	(0)	
<b>Type of family</b>	Nuclear	60	(66.7)	29	(32.2)	1	(1.1)	<b>0.867</b> NS
	Joint	11	(78.6)	3	(21.4)	0	(0)	
	Extend	17	(65.4)	9	(34.6)	0	(0)	
<b>Economic status</b>	Sufficient for daily needs	55	(67.1)	26	(31.7)	1	(1.2)	<b>0.004</b> HS
	Insufficient	23	(71.9)	9	(28.1)	0	(0)	
	Exceeds needs	10	(62.5)	6	(37.5)	0	(0)	
<b>Type of delivery</b>	Normal vaginal delivery	37	(75.5)	12	(24.5)	0	(0)	<b>0.447</b> NS
	Caesarean section	39	(65)	20	(33.3)	1	(1.7)	
	Episiotomy	12	(57.1)	9	(42.9)	0	(0)	

**Table 6:** Association between mothers' awareness regarding vaccination and selected socio-demographic characteristics.

Vaccination (scores)		Not aware		Neutral		Awareness		P-Value
Socio Demographic characteristics		No.	(%)	No.	(%)	No.	(%)	
<b>Mother's age (Years)</b>	16-24	18	(13.8)	5	(3.8)	1	(0.8)	<b>0.047 S</b>
	25-33	49	(37.7)	20	(15)	1	(0.8)	
	34-42	30	(23.1)	6	(5)	0	(0)	
<b>Occupation</b>	Housewife	37	(36.6)	61	(60.4)	3	(3)	<b>0.320 NS</b>
	Governmental employee	7	(35)	13	(65)	0	(0)	
	Private employee	2	(66.7)	1	(33.3)	0	(0)	
	Student	5	(83.3)	1	(16.7)	0	(0)	
<b>Level of education</b>	Illiterate	20	(35.7)	34	(60.7)	2	(3.6)	<b>0.855 NS</b>
	Able to read and write	6	(46.2)	7	(53.8)	0	(0)	
	Primary school graduate	2	(18.2)	8	(72.7)	1	(9.1)	
	Secondary school graduate	9	(42.9)	12	(57.1)	0	(0)	
	Institute graduate	6	(50)	6	(50)	0	(0)	
	College graduate	7	(46.7)	8	(53.3)	0	(0)	
	Post graduate	1	(50)	1	(50)	0	(0)	
<b>Residency</b>	Rural	14	(45.2)	16	(51.6)	1	(3.2)	<b>0.716 NS</b>
	Urban	24	(42.1)	32	(56.1)	1	(1.8)	
	Suburban	13	(31)	28	(66.7)	1	(2.4)	
<b>Type of family</b>	Nuclear	33	(36.7)	56	(62.2)	1	(1.1)	<b>0.392 NS</b>
	Joint	5	(35.7)	8	(57.1)	1	(7.1)	
	Extend	13	(50)	12	(46.2)	1	(3.8)	
<b>Economic status</b>	Sufficient for daily needs	33	(40.2)	47	(57.3)	2	(2.4)	<b>0.662 NS</b>
	Insufficient	14	(43.8)	17	(53.1)	1	(3.1)	
	Exceeds needs	4	(25)	12	(75)	0	(0)	
<b>Type of delivery</b>	Normal vaginal delivery	21	(42.9)	25	(51)	3	(6.1)	<b>0.02 S</b>
	Caesarean section	20	(33.3)	40	(66.7)	0	(0)	
	Episiotomy	10	(47.6)	11	(52.4)	0	(0)	

**Table 7:** Association between mothers' awareness regarding danger signs and selected socio-demographic characteristics.

Danger signs (scores)		Not aware		Neutral		Awareness		P-Value
Socio Demographic characteristics		No.	(%)	No.	(%)	No.	(%)	
<b>Mother's age (Years)</b>	16-24	6	(25)	17	(70.8)	1	(4.2)	<b>0.680</b> NS
	25-33	24	(34.3)	44	(62.9)	2	(2.9)	
	34-42	10	(27.8)	26	(72.2)	0	(0)	
<b>Occupation</b>	Housewife	34	(33.7)	65	(64.3)	2	(2)	<b>0.340</b> NS
	Governmental employee	4	(20)	15	(75)	1	(5)	
	Private employee	2	(66.7)	1	(33.3)	0	(0)	
	Student	0	(0)	6	(100)	0	(0)	
<b>Level of education</b>	Illiterate	20	(35.7)	36	(64.3)	0	(0)	<b>0.061</b> NS
	Able to read and write	2	(15.4)	11	(84.6)	0	(0)	
	Primary school graduate	2	(18.2)	9	(81.8)	0	(0)	
	Secondary school graduate	10	(47.6)	10	(47.6)	1	(4.8)	
	Institute graduate	1	(8.3)	11	(91.7)	0	(0)	
	College graduate	4	(26.7)	9	(60)	2	(13.3)	
	Post graduate	1	(50)	1	(50)	0	(0)	
<b>Residency</b>	Rural	14	(45.2)	16	(51.6)	1	(3.2)	<b>0.227</b> NS
	Urban	15	(26.3)	40	(70.2)	2	(3.5)	
	Suburban	11	(26.2)	31	(73.8)	0	(0)	
<b>Type of family</b>	Nuclear	25	(27.8)	62	(68.9)	3	(3.3)	<b>0.665</b> NS
	Joint	5	(35.7)	9	(64.3)	0	(0)	
	Extend	10	(38.5)	16	(61.5)	0	(0)	
<b>Economical status</b>	Sufficient for daily needs	29	(35.4)	52	(63.4)	1	(1.2)	<b>0.013</b> S
	Insufficient	10	(31.3)	22	(68.8)	0	(0)	
	Exceeds needs	1	(6.3)	13	(81.3)	2	(12.5)	
<b>Type of delivery</b>	Normal vaginal delivery	17	(34.7)	31	(63.3)	1	(2)	<b>0.785</b> NS
	Caesarean section	18	(30)	40	(66.7)	2	(3.3)	
	Episiotomy	5	(23.8)	16	(76.2)	0	(0)	

## DISCUSSION

Assessment of socio-demographic characteristics of mothers.

More than half (53.8%) of the mothers in the present study were between 25-33 years of age. These results are similar to a study carried out by Raffray et al (2014) in Colombia, which revealed that 46.6% of participants were 25-30 years old [12], but are different from a study done by Gul et al in the neonatology unit of Khyber Teaching Hospital in Peshawar in 2018, which stated that most of the mothers (62.7%) were in the age group of 21-31 years [13]. The current study showed that the highest percentages of the participants were housewives. This result agrees with the studies by Abbasi-Shavazi (2019) from Iran and Ahmed (2007) from Egypt, in which the majority of mothers were also housewives [14, 15]. The results of the present study revealed that less than half of the research sample was illiterate. This result agrees with a study by Roba et al in eastern Ethiopia who mentioned that most mothers did not have any education [16]. However, the results are different from a study done by Çelen and Arsalan in Turkey in 2017, which indicated that 38.25% of mothers had a primary school education [17]. In the current study, most participants lived in urban areas. This finding is in agreement with a study carried by Abdel-Latif et al in Australia, which showed that the highest percentage of mothers lived in urban areas [18], and also similar to a study done by Roba et al in eastern Ethiopia, which indicated that more than half (55.87%) of mothers lived in urban areas [16]. Nearly three-quarters of mothers in the current study lived in a nuclear family. This finding is similar to a conducted by Nepal and Thapa in 2017, which showed that more than half of mothers were living in a nuclear family [19]. Our finding differs from a study of Castalino et al from India who found that the majority

of mothers lived in a joint family [20]. Regarding the economic status, most participants of the current study indicated that their income was sufficient for daily needs. This result is consistent with the finding of a Bangladeshi study by Khatun and Rahman from 2008, which mentioned that most of the mothers' economic status satisfied their daily needs [21]. One-third of the participants of the current study delivered preterm babies by C\S. These finding is supported by a study of Çelen and Arsalan in Turkey, which found that the majority of mothers had C\S delivery [17], and also by a randomized clinical trial study by Akbarian et al (2017) in Iran, which showed that 74% of mothers in the intervention group and 66% mothers in the control group delivered by a cesarean section [22].

Assessment of mothers' awareness regarding preterm baby home care.

The high percentage (66.2%) of mothers in the current study had neutral awareness regarding thermoregulation of preterm babies at home. A similar study was conducted by Malathi et al (2014) in India, which revealed that the majority of mothers had a neutral level of awareness about thermoregulation [23]. The majority (70%) of mothers in the current study had neutral awareness regarding breastfeeding. The results are the same as in a cross-sectional survey conducted in Bangalore on postnatal mothers, which reported that most of the mothers had neutral breastfeeding awareness [26]. Most of the mothers in the current study had poor awareness regarding infection prevention. This finding disagrees with a study by Khaledi et al (2015) in Iran, which found that most parents were aware of regular hygiene to prevent infection [30]. The majority of mothers had neutral awareness regarding vaccinations. A similar study, which was done by Meseka et al (2017)

in South Sudan found that most participants had gaps in awareness about vaccinations [24]. The high percentage (66.9%) of mothers in this study had neutral awareness regarding recognizing danger signs. This finding is not supported by Anmut et al (2017) who conducted a study in Ethiopia, which revealed that mothers had poor awareness about recognizing danger signs [34].

#### Home care

Our study shows statistically a very highly significant association between mothers' awareness of thermoregulation and their type of occupation with the p-value=0.001. This finding is consistent with a study done by Meseka et al in Soudan, which mentioned a highly significant statistical association between mothers' awareness and their type of occupation [24]. The findings further show that there is statistically a very highly significant association between a type of family and their awareness regarding thermoregulation. This finding is supported by a study of Panda et al in India, which found a statistically significant association between the type of family of mothers and their awareness regarding thermoregulation, with the p-value <0.001 [25]. The result of the current study shows that there was no statistically significant association between the age of participants and their awareness regarding thermoregulation. This finding is in agreement with a study of Malathi (2015), which found that there was no statistically significant association between the age of the participants and their awareness regarding thermoregulation [23]. Current results show that there is no statistically significant association between the level of education of mothers and their awareness regarding thermoregulation, which is supported by a study of Malathi (2015) who found no statistically significant association between the level of education of mothers and their

awareness regarding thermoregulation [23]. The result of the current study also shows no statistically significant association between the area of living of mothers and their awareness regarding thermoregulation. This finding is not supported by a study, which was conducted by Panda et al in India who found a statistically significant association between the area of living of mothers and their awareness regarding thermoregulation with the p-value <0.001 [25]. There is also no statistically significant association between economic status and mothers' awareness of thermoregulation in the present study. This finding is in contrast with a study of Malathi (2015) who found a statistically significant association between the economic status and thermoregulation awareness with the p-value=<0.05 [23]. Our findings revealed no statistically significant association between the type of delivery and the mothers' awareness of thermoregulation. It is the same result as in a study of Çelen and Arsalan in Turkey (2017), which found there was no significant association between the type of delivery and their awareness regarding thermoregulation [17].

Association between mothers' awareness regarding breastfeeding and selected socio-demographic characteristics.

Our findings show that there is a statistically significant association between a residency of the mothers and their awareness of breastfeeding with p-value=0.037. Vijayalakshmi et al (2015) conducted a cross-sectional survey in Bangalore on postnatal mothers, which found a statistically significant association between the participants' area of living and their awareness regarding breastfeeding with the p-value=0.012 [26]. A type of delivery was statistically significantly associated with mothers' awareness regarding breastfeeding with the p-value = 0.050.

Jamil et al (2018) in Lahore found a significant association between the modes of delivery of participants and mothers' awareness regarding breastfeeding with the p-value=0.037 [27]. The present study indicates that there is no significant association between mother's awareness regarding breastfeeding and their age, occupation and educational level. Abdel Aziz et al (2018) in Burkina Faso conducted a descriptive study among mothers, which found no significant association between mothers' awareness of breastfeeding and their age, occupation and educational level [28]. There was no significant association between mothers' awareness regarding breastfeeding and their types of family and economic status. This finding agrees with a cross-sectional study by Vijayalakshmi et al (2015) in Bangalore who conducted a study on mothers of preterm babies, which found no significant association between mother's awareness regarding breastfeeding and their types of family and economic status [26].

Association between mothers' awareness regarding infection prevention and selected socio-demographic characteristics. The researcher found that there is a highly significant statistical association between mothers' awareness of infection prevention and their economic status. This result is not matched with a study, which was done in India and mentioned that economic status does not influence mothers' awareness of infection prevention [21]. Our study reveals that there is a statistically significant association between mother's awareness regarding infection prevention and their occupation with the p-value = 0.037. This finding is supported by a cross-sectional study of Amolo et al (2017) in Kenya, which showed that there was a statistically significant association between poor mothers' awareness and their occupation regarding infection prevention [29].

Table 4 shows that there is no statistically significant association between mothers' awareness regarding infection prevention and their age in the present study. This result disagrees with the research of Khaledi et al (2015) in Iran who conducted a descriptive, cross-sectional study and found that there was a statistically significant association between mothers' awareness and the age of participants [30]. Regarding the level of education, the present study shows that there is no statistically significant association between mothers' awareness regarding infection prevention and their level of education. This result is in line with a study done in Kenya, which found that there was a statistically significant association between mothers' poor awareness of infection prevention and their level of education [29]. The current study found that a residency area, types of family and a mode of delivery of participants hadn't influenced mothers' awareness regarding infection prevention. It correlates with a previous study, which was done in India and found no statistically significant association between residency areas, types of family and a mode of delivery with mothers' awareness of infection prevention [21].

Association between mothers' awareness regarding vaccinations and selected socio-demographic characteristics.

Our findings show that there is a statistically significant association between mothers' awareness regarding vaccinations and their age. As in research done by Adefolalu et al (2019) who conducted a cross-sectional descriptive study in Ikorodu Local Government Area (LGA) of Lagos, which found that there was a statistical association between mothers' awareness regarding vaccinations and their age [31]. Our study shows a statistically significant association between mothers' awareness regarding vaccination and their type

of delivery, which is different from a study of Castalino et al (2014), which found no such association [21]. Regarding mothers' occupation and residency, the current study demonstrates that there is no statistical association between mothers' awareness regarding vaccination and their occupation and residency area. Bofarraj (2008) in Libya conducted a cross-sectional survey of a non-randomized sample of 200 mothers and found that there was no statistical association between mothers' knowledge regarding vaccinations and their occupation and residency area ( $p\text{-value} \Rightarrow 0.05$ ) [32]. According to the results of the present study, there is no statistical association between mothers' awareness of vaccinations and their level of education. A study by Adefolalu et al (2019) in Local Government Area (LGA) of Lagos also reported that there was no statistical association between mothers' awareness regarding vaccinations and their level of education [31]. Regarding economic status and a type of family, the current study shows there was no statistical association between mothers' awareness regarding vaccinations and their economic status and a type of family. These findings are supported by a study of Jose et al (2013) conducted a study in Mangalore, which concluded that there was no statistical association between mothers' awareness of vaccinations and their economic status and a type of family [33].

Association between mothers' awareness regarding danger signs and selected socio-demographic characteristics.

Our study shows that there is a statistically significant association between mothers' awareness regarding danger signs and economic status. This result is in line with a study of Adem et al (2015), who conducted a cross-sectional study in Ethiopia and found a statistically significant association between mothers' awareness regarding

danger signs and their economic status [35]. Regarding the mothers' age, this study found no statistically significant association between mothers' awareness of danger signs and their age and level of education. These results agree with a study done by Ekwochi et al (2015) in Nigeria who stated that there was no statistically significant association between mothers' awareness regarding danger signs and their age and level of education [36]. Furthermore, according to the current study, there is no statistically significant association between mothers' awareness of danger signs and their occupation and residency area. These results are different from the conclusions of a study by Jemberia et al (2018) conducted in Ethiopia, which described a statistically significant association between mothers' awareness of danger signs and their occupation and residency area [37]. Additionally, this research found no statistically significant associations between mothers' awareness regarding danger signs and the type of family and the mode of delivery. These findings agree with findings of Prabhakaran (2015) who conducted quantitative pre-experimental research in India and mentioned that there were no statistically significant associations between mothers' awareness regarding danger signs the type of family and the mode of delivery [38].

## CONCLUSION

This study found that the majority of studied mothers were of childbearing age, the majority were illiterate, housewives and lived in an urban area. The results further indicate that most of the mothers had poor awareness regarding preterm baby home care, and occupation, type of family, residency, type of delivery, age of mothers, and economic status influenced the mothers' awareness regarding

preterm baby home care.

### CONFLICT OF INTEREST

There is no actual or potential conflict of interest.

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