



## Knowledge of Mothers regarding Premature Baby Care in Mosul city

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### Abstract

**Background:** Premature babies, those born very early, often have complicated and medical problems. Typically, complications of prematurity are varying. The premature baby has a higher risk of complications. The baby will likely need a more extended hospital stay in a special nursery unit at the hospital, depending on how much care requires. Mother is faced with numerous challenges by experiencing a premature birth; therefore, knowing about the mother's efforts and knowledge regarding premature infants. The present study was carried out to explore the mothers' knowledge regarding prematurely born infants.

**Patients and methods:** This survey was conducted amongst 100 mothers visiting the Al Khansa Hospital and Ibn Al-Atheer, both hospital, specialized in the maternity and pediatric. The collection of data was done for the period of 15th November 2019 until 28th February 2020. A questionnaire form consisting of multiple-choice questions about knowledge about infant premature health was distributed to the volunteer mothers. The data was compiled and analyzed statistically. A Chi-Squair was used in data analysis resulted.

**Results:** In the present study, 53% of mothers scored 50 or less (poor knowledge), showing inadequate knowledge about infant premature health. Mother's knowledge about infant premature health showed a significant positive correlation with her education, the order of childbirth, age at childbirth, and socioeconomic status (P-value<0.001).

**Conclusion:** The present study concludes that mothers have inadequate knowledge of premature infant health. Factors like mother's education, birth order of the child, mother's age at childbirth, and her socioeconomic status are related to the mother's knowledge

**Keywords:** *mother knowledge, care of the baby, premature baby*

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## **INTRODUCTIONA**

Preterm is defined as babies born alive before thirty-seven weeks of pregnancy are completed. There are sub-categories of preterm birth, based on gestational age extremely preterm less than 28 weeks very preterm 28 to 32 weeks moderate to late preterm 32 to 37 weeks (Quinn et al., 2016) (Glass et al., 2015).

An evaluated 15 million preterm babies are born every year. That is more than 1 in 10 babies (Kinney et al., 2012). About 1 million children die each year due to problems of preterm birth. Worldwide, prematurity is the leading cause of death in children under the age of 5 years. Also, in almost all countries with reliable data, preterm birth rates are growing. More than 60% of preterm births occur in Africa and South Asia, but preterm birth is truthfully a global problem. In the lower-income countries, on average, 12% of babies are born too early compare with 9% in higher-income countries. Therefore the low-income families are at higher risk than rich (Blencowe et al., 2013).

In survival rates about the world are stark. In low-income settings, half of the babies born below 32 weeks (2 months early) die due to a lack of feasible, cost-effective care, such as warmth, breastfeeding care, and primary care for infections and breathing problems (Lawn et al., 2013). In high-income nations, nearly all of these babies survive. Suboptimal use of skill in middle-income settings is causing an

increased load of disability among preterm babies who survive the neonatal period (Pignotti & Donzelli, 2015).

Preterm birth occurs for a variety of reasons. Most preterm births happen spontaneously, but some are due to early induction of labour or caesarean birth, whether for medical or non-medical reasons. Common causes of preterm birth include numerous pregnancies, infections, and chronic conditions such as diabetes and high blood pressure; however, often, no cause is identified. There could also be a genetic influence (M., 2016).

Usually, the signs of premature labour, such as contractions, waters breaking, haemorrhage, a 'show' of mucus from your vagina or a sudden decrease in movements, dramatic difference in survival of premature babies depending on where they are born. For example, more than 90% of extremely preterm babies (less than 28 weeks) born in low-income countries die within the first few days of life; yet less than 10% of particularly preterm babies die in high-income settings. (Gephart et al., 2012). Premature Babies usually look like small full-term babies. Very premature babies will be small and look very fragile with some unique characteristic Skin it might not be fully developed and may appear shiny, translucent, dry, or flaky (Mancini & Lyons, 2020). The baby may not have any fat beneath the skin to keep them warm. The eyelids of very premature babies may

be fused shut at first (Huang et al., 2019). By 30 weeks, they should be able to respond to different sights. The baby's genitals may be small and underdeveloped. Hair may have slight hair on its head, but lots of soft body hair (called 'lanugo'). Lack of stored body fat leads to Low body temperature, particularly immediately after birth in the delivery room also, Lack of reflexes for sucking and swallowing, leading to feeding problems (Xu et al., 2015).

The Risk factors of Premature delivery containing; previous premature birth, Pregnancy with twins, triplets or other multiples, the interval of fewer than six months between pregnancies, Conceiving through in vitro fertilization, Problems with the uterus, cervix or placenta, Smoking, infections chronic conditions, such as high blood pressure and diabetes and Physical injury or trauma (Leneuve-Dorilas et al., 2019)(Borowiec et al., 2018).

Some difficult is common in premature babies breathing complications, heart problems, harms in their digestive tract, jaundice, anaemia, and infections.(Culha et al., 2019). However, most premature babies will develop normally, but they are at higher risk of developmental problems so that they will need regular health and development checks at the hospital or with a paediatrician. Problems that may occur later in children who were born prematurely such as language delays, growth and movement problems, problems with teeth, problems with vision or

hearing, thinking and education difficulties social and emotional problems (Abraham & Rejiya, 2016).

The premature birth needs lengthy hospitalization of infants in the Neonatal Intensive Care Unit (NICU) are extremely traumatic and distressing events for parents, leading to a collapse of the family unit due to the impairments, restrictions, and situations damage the family routine(Hoffman et al., 2020). The hospitalization of a child in the NICU is a difficult and challenging experience for mothers and their families, since the highly modern and technological environment of the NICU separates the babies physically, psychologically, and emotionally from their parents. Moreover, the families must face several problems during the period of hospitalization, specifically the experience of separation, fear of disease and the unknown, the hospital environment, and uncertainty about the present and the future of the family that is the clinical evolution of the baby and its survival. Premature birth is a traumatic experience for any family (Kerry et al., 2019). The typical fears every parent experiences are amplified by the heightened risk of health problems that you may feel unprepared to handle. Having a premature baby is hard in so numerous methods (Dalstrom, 2019).

#### **the objectives of the study**

- To identify the socio-demographic characteristic and the sample of the study.
- To assess the mothers' knowledge about preterm baby care.

-To find out the correlation between the socio-demographic characteristic and results of the study.

#### **METHODS AND MATERIALS**

##### ***Study design and setting***

The current study was carried out using a descriptive cross-sectional study to adopted to accomplish the objectives of the research for the period from 10<sup>th</sup> October 2019 until 2<sup>th</sup> May 2020.

The study was carried out in tow hospitals Al Khansa Hospital is one of Mosul large hospitals. Another hospital is Ibn Al-Atheer, the both hospitals, special in the maternity and pediatric provides care to the services to the region people. Located in East of Mosul city also, both hospitals located on the left side of Mosul city

##### ***Study sample***

A total number of (100) participated in this study. A non-probability sample was selected purposively. The inclusion criteria were mothers of infants with gestational age (GA) of less than 37 weeks, birth weight less than 1500 g, hospitalization time greater than or equal to 72 hours, from different resident's region.

##### ***Data collection***

The collection of data was done for the period of 15<sup>th</sup> November 2019 until 28<sup>th</sup> February 2020. A researcher-designed questionnaire was used to collect the required data. Questionnaire forms consisting of Part-A (10 multiple choice questions on knowledge. Part-B (information regarding mother's education, order of child birth, age of mother at child birth and socioeconomic

status) was distributed to the volunteer mothers. Written consent was obtained from all volunteers before participating in the study. were distributed among the volunteers to tick the appropriate answer. Questionnaires were framed in Arabic and English languish. Fully completed questionnaire forms were only taken into consideration. At the end, 100 completed questionnaires were included in the study. Data was compiled in excel sheet and analyzed statistically. Face-to-face interviews were conducted with the mother at their hospitals in order to complete the questionnaires.

To Identify the obstacles that may be met during the study, to Assess the time essential for data collection as well as to Decide the validity and reliability of the study data and tools, a pilot study was applied during a period ten days extending from the period of 1st November 2019, until of 10th November 2019. Face and content validity of the study instruments was done through submitted it to a panel of (10) experts that were chosen from different specialties that related to the study objective

##### ***Statistical Analysis***

Data were analyzed using the Statistical Package for Social Sciences (SPSS version 25). Descriptive data analysis approach frequency distribution percentage. Numerical variables were summarized as means and standard deviations. The Chi-square test of association was used to compare proportions when p-value of  $\leq$

0.05 was considered statistically significant.

**Ethical consideration**

Required approval was obtained from the College of Nursing, Region of Iraq. In addition, the Directorate of Education in Ninawa Director of health gave necessary approval. Moreover, each mother announced his/her informed consent.

**RESULTS**

knowledge scores of the mothers who participated in the study divided in three categories poor good excellent 53.0% had poor knowledge (score <5), 36.0% had good knowledge (score 5-7) and 11.0% had excellent knowledge (score >7) about premature baby care (Table 1). Demographical distribution displays in

(Table 2). Distribution of knowledge score according to mother’s education shown in (Table 3). The knowledge score amongst mothers with third child was higher than amongst mothers with first and second child (P-value <0.001) (Table 4). The older mothers (25 years and above) had better knowledge score regarding infant oral health as compared to younger ones (P-value >0.001) (Table 5). The mothers with upper socioeconomic status had better knowledge score as compared to mothers with lower socioeconomic status (P-value < 0.001) (Table 6).

Table 1: Distribution of knowledge score among the mothers in the preterm baby care.

Knowledge score	Level of knowledge	No. of mothers	% of mothers
<50	Poor	53	53.0
50 – 70	Good	36	36.0
>70	Excellent	11	11.0

Table 2. Distribution of socio-demographic data (n=100)

Maternal data	Mean	Standard deviation
Maternal age	26	9
Maternal age with first pregnant	17	8
Pregnancy data	Frequency	%
Previous premature births	12	12
Previous life births	83	83
Neonatal data	Frequency	%
Gestational age less than 37	30	30
Gestational age more than 37	70	70

Table 3: Distribution of knowledge score according to mother's education

Mother's Education							P-value
Mother knowledge	Primary level		Secondary level		Graduate		
Knowledge score	n	%	n	%	n	%	
<50	26	81.3	16	50	11	30.6	0.001
50- 70	4	12.4	11	34.4	21	58.3	
>70	2	6.3	5	15.6	4	11.1	
Total	32	100	32	100	36	100	

P-value by Chi-Square test. P-value<0.001. is considered to be statistically significant. \*\*\*P-value<0.001.

Table 4: Distribution of knowledge score according to birth order.

Birth order							P-value
Mother knowledge	1 <sup>st</sup> Child		2 <sup>nd</sup> Child		3 <sup>rd</sup> Child		
Knowledge score	N	%	n	%	N	%	
<50	41	78.8	11	50	1	6.7	0.001
50 – 70	10	19.2	17	34.4	9	60.0	
>70	1	1.9	5	15.6	5	33.3	
Total	52	100	33	100	15	100	

P-value by Chi-Square test. P-value<0.001. is considered to be statistically significant. \*\*\*P-value<0.001.

Table 5: Distribution of knowledge score according to mother's age.

Mother's age (years)							P-value
Mother knowledge	18-21 Years		22-25 Years		25-and above		
Knowledge score	N	%	N	%	N	%	
<50	32	91.4	21	55.3	0	0.0	0.001
50 – 70	3	8.6	17	44.7	16	59.3	
>70	0	0.0	0	0.0	11	40.7	
Total	35	100	38	100	27	100	

P-value by Chi-Square test. P-value<0.001. is considered to be statistically significant. \*\*\*P-value<0.001.

Table 6: Distribution of knowledge score according to mother's socio-economic status.

Socio-economic status				
Mother knowledge	lower	Middle	Upper	P-value

Knowledge score	N	%	N	%	N	%	0.001
<50	29	96.7	24	51.1	0	0.0	
50 – 70	1	3.3	21	44.7	14	60.9	
>70	0	0.0	2	4.3	9	39.1	
Total	30	100	47	100	27	100	

*P-value by Chi-Square test. P-value<0.001. is considered to be statistically significant. \*\*\*P-value<0.001.*

### Discussion

#### knowledge score of mothers.

Prematurity is the first cause of neonatal mortality rate worldwide. Parents of children admitted to the NICU need lots of information to engage in the treatment process and supportive care. Health care professionals in NICU printed materials, an audio recording of neonatologist consultation consider the useful and worthy information source (De Rouck & Leys, 2009). If parents omitted from care and decision-making process, they would stop feeling responsibility (Sullivan et al., 2014). In the present study, our first aim was to evaluate basic knowledge of mothers about their premature baby health. More than half (53%) mothers had knowledge score <5 which indicates that they don't have basic knowledge about early baby care and are not aware among the mothers in the preterm baby care. The level of knowledge is poor, good, and excellent (53%, 36%, 11%), respectively. Lack of knowledge was particularly worrying in four key areas. The proportion of mothers with knowledge of specific essential care and feeding practices varied, as shown in Table 1. When comparing this

result with other studies show the following, many participants did not have enough information about post-discharge care, para clinical follow-up, specialist visits show the rate of parents' awareness about premature neonates' care processes (Ontita et al., 2016). Shieh et al. in 2010 compared two group mothers with and without training course before infant NICU discharge. After three months' level of knowledge providing, infant care and mothers' self-confidence were higher in parents undergoing education. (Shieh et al., 2010). The recent study showed that among 20 questions, most parents' awareness belongs to 3 items; first, continuous attendance in the ward. Ninety percents of parents had this information that presence in NICU is essential. The American Association of Pediatrics recommended that parents attendance result in invaluable benefits such as decreasing parents' stress, improving the infant clinical recovery and relief the infant's pain (Gallegos-Martínez et al., 2013). On the other hand, the majority of participants did not have enough information about post-discharge care,

para clinical follow-up, and specialist visits. It may relate to impairment in the educational system and no accessible information resource for parents after discharge. Parents need some knowledge and skills about essential care feeding, growth, bathing, sleeping, complications such as colic, apnea, noisy birthing. Physicians and nurses are the primary sources of information. Teaching and training courses during admission days about post-discharge care would be a great help for parents (De Rouck & Leys, 2009).

**Distribution of knowledge score according to mother's education**

Our second aim was to correlate knowledge of mothers about Premature baby with mother's education. Education levels of the mother are divided into three-level primary, secondary, and graduate. The knowledge score is correlated with the education level. The majority of the primary level (81.3%), show the poor knowledge level score, the secondary level (50%), have poor knowledge, while only (30.6%) of the graduate education level have poor level p-value by Chi-Square test. P-value<0.001, is to be statistically significant.

This study highlights the value of comparative cohort analysis to understand better the relationship between maternal education and markers of baby care in different settings across Europe. Mother's education was linked to an appreciable risk of preterm and small for gestational age

(SGA) births across 12 European countries. The excess risk of preterm births associated with low maternal education was 1.48 (1.29 to 1.69) and 1.84 (0.99 to 2.69) (Ruiz et al., 2015).

In contrast results, this descriptive cross-sectional survey aimed to answer these questions: What is the level of mothers' knowledge of certain aspects of premature child health matters. Another quotation is there a correlation between mothers' level of knowledge and the number of years spent in formal education. The study revealed significant gaps in mothers' knowledge of certain child health matters. It also revealed that health education in schools was deficient and the relation between knowledge score and formal education was not significant (Al-Ayed, 2010).

**Distribution of knowledge score according to birth order.**

Another aim of this study was to correlate the knowledge of mothers with the order of childbirth, in the present study, significant positive co-relation correlation was observed between the mother's knowledge and order of childbirth. (78.8%) mothers with first child had poor knowledge about premature infants as compared to 6.7% of mothers after their third child. P-value by Chi-Square test. P-value<0.001. is considered to be statistically significant. \*\*\*P-value<0.001.



A possible explanation of these results may be because mothers were not much aware and had limited knowledge about baby care during their first child, and with experience, their knowledge increases with the next childbirth.

**Distribution of knowledge score according to mother's age.**

This study examined the relationship between maternal age and knowledge level found a significant positive correlation was observed between the age of mother at childbirth and knowledge ( $p < 0.05$ ) by the Chi-Square test.  $P\text{-value} = 0.001$ . It may be hypothesized that with time and age, mother's knowledge about the maintenance of premature baby care increases. Our results are similar to another study (Spielman & Taubman-Ben-Ari, 2009).

**Distribution of knowledge score according to mother's socio-economic status.**

The present study showed that there was statistically significant relationship between mother's knowledge with her socioeconomic status. 96.7% of mothers with low socioeconomic status had poor knowledge and (score  $< 5$ ) as compared to high socioeconomic status in which 60.9% mothers scored 5-7 (good knowledge) and 39.1% scored  $> 7$  (excellent knowledge). None of the mothers with high socioeconomic status scored  $< 5$  indicating that mothers with high socioeconomic status are more concerned about the

premature care as they are more educated, having social media exposure and can assess more health care facilities as compared to mothers with low socioeconomic status. The study supports our results that socioeconomic status is directly linked to the mother's knowledge (Habibi et al., 2018)(Sutha et al., 2018). In our study, we observed that overall, mothers are not aware and have less knowledge about premature infant care. Mothers should be motivated and provided counseling and anticipatory guidance so that they can participate and play their role in the promotion of good infant health. The mothers with upper socioeconomic status had better knowledge scores as compared to mothers with lower socioeconomic status ( $P\text{-value} < 0.001$ ).

**Conclusion**

Mothers have inadequate knowledge about premature infant health. Positive correlation between knowledge of mothers about the Premature baby with mother's education. The present study found the significant positive correlation was observed between the mother's knowledge and order of childbirth. Significant positive correlation was observed between the age of mother at childbirth and knowledge. Significant relationship between mother's knowledge with her socioeconomic status. mother' education.

**Recommendations**

This study recommended to community health education through health promotion programs about the premature baby care as

well as that play an essential role in avoiding diseases and complication of premature baby. Further large sample studies are needed to generalizing the results. Efforts should be adopted by the

Iraqi ministry of health to establish a health promotion programs about the premature baby care.

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