

Mother's Knowledge and Practices Concerning Early Colostrum Feeding in Erbil Governorate: A Comparative Study

Assessment of three groups of mothers regarding initiate colostrum feeding

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ABSTRACT

The first milk called colostrum is the promotes a baby's growth and development. The objective of the study is to explore the level of knowledge and practices among mothers in three different areas, and compare between related areas regarding first colostrum feeding, in the Erbil governorate- Iraqi Kurdistan region. A descriptive study was conducted in three selected provinces in Erbil Governorate. During the period started on 2nd of Jan. to the end of May. 2019. non-probability of 400 normal vaginal delivered in the three general hospitals were recruited. A special tool was constructed by researchers, a direct interview was adapted. Data collection was done and entered into the computer. A special SPSS software version 23 was used to analyzing the data, including frequency, chi-square, and two-tailed t-test to access the purpose of the study. The study found that the mothers in Shaqlawa city were more knowledgeable, compared with mothers in another two areas Erbil city and Koy-Sanjaq city. However, mothers in all three provinces were not practiced colostrum feeding after birth. statistically, a significant association was found between the mother's knowledge and residency areas, SES, age, and level of education. And found a statistical association between mothers' practices and SES, age of mothers, and level of education. The study found a statistically significant difference between Erbil city and Koy-Sanjaq city; between Shaqlawa city and Koy-Sanjaq city concerning mothers' practices respectively, while non-statistically differences were found between Erbil mothers and Shaqlawa mothers, non-statistically significant differences between practices of Erbil city mothers and Shaqlawa city mothers. Whereas the study reveals statistically differences between Erbil city mothers, Koy-Sanjaq city mothers, also found a non-statistically significant difference among mothers in Koy-Sanjaq and Shaqlawa regarding knowledge. The mothers in Shaqlawa city had better knowledge and all three districts complained of poor practices regarding colostrum feeding, baby-friendly hospital is recommended for all provinces in Erbil governorate.

Keywords: *Infant, Mothers, Knowledge, Colostrum, Nutrients.*

1. INTRODUCTION

The first milk called colostrum it is a product by the mammary glands of mammals in late pregnancy, which is contained in proteins, carbohydrates, sodium chloride, and vitamin A, while associated with lower amounts of lipids and potassium than normal milk. Less than half of mothers have poor knowledge regarding the benefits of colostrum and are offered as a pre-lacteal feeding to babies. (1,2). The first milk is very essential for newborns in prevents infectious diseases. it is rich in immune globin which participates in preventing babies from many bacterial, viral, and fungal and protozoa agents, this can be controlled by feeding colostrum, and can prevent stunting, underweight, and wasting (3) Despite the World Health Organization (WHO) recommends that every newborn baby should feed breast milk within the first hour, initiation of breastfeeding (BF) is poorly practiced by mothers especially who gives first birth, in developing countries (4). The limited population knows the importance of colostrum especially non-educated mothers or primigravida mothers. Unfortunately, wrong knowledge believes was recorded among mothers, which is colostrum is a harmful substance that should be discarded. Many barriers are preventing the first feeding of colostrum to newborn babies, such as maternal barriers, mothers' lack of knowledge about the importance of early BF, and the benefits of colostrum feeding. Some mothers dislike the color of colostrum (5). The mortality rate among newborns rated around 42 deaths per 1,000 live births in Erbil city. Women in Iraq have different practices in the timing of starting breastfeeding, which is a difference between geographical areas, particularly when initiating the BF within the first hour. Whereas the studies in Erbil city found that the women were less likely to start early BF within the first hours (6) In a study was conducted in India confirmed that most of the mothers unaware of the time of initiation of breast milk and colostrum feeding (7). The majority of women undergoing normal delivery and cesarean section gave correct responses about the time of initiation of BF. Though the mothers knew that BF should be initiated within one hour after delivery, only a few mothers were practiced (8). A study was conducted in India to compare between rural and urban mothers and found delayed initiation of the first BF is a common practice and most of them were not aware that the contains of the colostrum, the author stated that the faulty feeding practices were more prevalent, due to different factors such as lower-level education, lack of knowledge, religious beliefs, customs, elder's and relative's advice (9). Studies observed that the maternal age at first childbirth has increased in most developed countries in the past 20 years, which may need more information and practices (10).

A systematic review confirmed that the colostrum, a nutrient-rich fluid produced by female mammals immediately after delivery, is rich in the immune, promotes growth, development, and tissue repair. Colostrum is a complex biological fluid; this product helps in the development of immunity in the newborn, through significant quantities of complement components that act as natural anti-microbial agents which be active and stimulate the maturation of an infant's immune system. The colostrum which consists of both bovine colostrum, and other natural material for immune, can be used to treat gastrointestinal tract diseases (11). The prevalence of early colostrum feeding is lower globally in many of the developing and developed countries around the world (12). Though the mothers know the necessity of colostrum feeding, but is still it is poorly understood especially by mothers in rural areas due to various factors (13).

One of the global public health is exclusive Breast Feeding (EBF) for the first six months of life, it is promoting the reduction of infant morbidity and mortality (14). Early feeding was recommended by the WHO to provide adequate and safe complementary breast milk. Studies in central and eastern European countries to middle rate in South Asia revealed that the mothers were less concerned with early breastmilk (15). There was another study inside of Erbil city (a capital) that indicated that the mothers had declined starting BF (6). A specific education program of mothers about BF will increase, and succeed early BF. Breast-feeding is not instinctive, can be learned. It is a natural process; each mother should know and start practicing colostrum feeding, should teaching mothers about the comfortable position, appropriate techniques, feeding frequency, the reflexes, care of the breast, and length of feeding (16).

2. METHODS AND SUBJECTS

2.1. Study design and aims:

A comparative, descriptive study was designed to explore and find out the differences between knowledge and practices of mothers regarding colostrum feeding among mothers in three different areas in the Erbil Governorate of the Iraqi Kurdistan region.

2.2. Tim and setting of the study:

This study was carried out and started during the period of 2nd of Jan. to the end of May. 2019, in three different areas of Erbil governorate (Erbil city (inside) Shaqlawa city and Koy Sanjaq city in Erbil city – Kurdistan region of Iraq. Erbil city is bordered with Turkey in the north and with Iran northern to the east, and with Mosul city, and Duhok city in the west, and Sulaymaniyah city in the east with Kirkuk city in the south. (Figure 1).

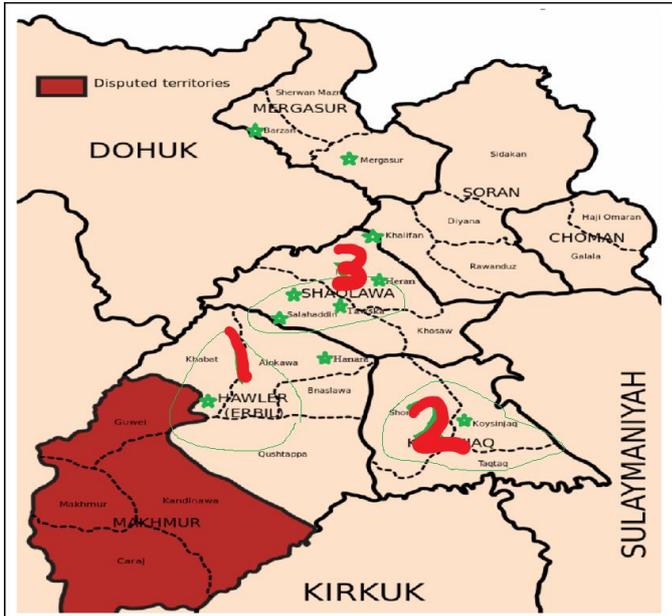


Figure 1 Shows the map of Erbil government. (Google search)

2.3. Sample size and Data collection

In 2008 the World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) had launched a special program about Baby-Friendly Hospital Initiative (BFHI) in Shaqlawa general hospital of Erbil governorate of Iraqi Kurdistan region which was certified as a BFH by the Iraqi Ministry of Health and UNICEF as a first step to promote, initiate, protect and support successful BF in the region (17), based on the mentioned program, the study aimed to find out the difference between mothers in other areas with Shaqlawa women, though we compared the colostrum feeding among mothers’ specifically the knowledge and practice regarding colostrum feeding in different areas, for that reason the study selected Shaqlawa city selected purposively. In the second step, the researchers selected Erbil city reason behind Erbil city for the third step the researcher applied simple random sampling to identify the third area (Koy-Sanjaq) (Figure 1).

Depending on Yamane formula (18) for estimating sample size, the study will recruit 400 mothers who delivered their babies in three different areas in Erbil city.

$$n = \frac{160}{1 + 160(0.05)^2}$$

$$n = 115$$

where:

n =the sample size

e = the alpha error of 0.05

N =the size of population (according to the non-official census in both of Maternity Teaching Hospital in Erbil city 318, and Shaqlawa general hospital 185, and 127

cases from Koy Sanjaq General hospital there was case registered) the total mother were 630 mothers. A non-probability of 177 mothers in the Maternity Teaching Hospital in Erbil City, with 126 mothers from Shaqlawa and 97 mothers from Koy-Sanjaq Hospital who attended for the same purpose, the total was 400 mothers. Erbil is the capital of the Kurdistan region, Shaqlawa is a district which it is faraway about 55 km from the north of Erbil city, and Koy-Sanjaq is a third selected district, which it is located in the west of Erbil about 75 km.

2.4. Ethical consideration:

The official permission was obtained from the Erbil General Directorate of Health and the chosen Hospitals for conducting the study. The mothers were recruited respectfully to participate in the study. Oral informed consent was obtained from the participants, the researchers confirmed anonymity and confidentiality were considered.

2.5. The tool of the study:

The researchers constructed a special questionnaire, after an extensive review of related literature, and previous studies. The questionnaire was categorized into three parts: the first part; was to obtain the sociodemographic characteristics of mothers such as age, level of education, residency areas. The second part was to assess the mother’s knowledge, and it was consisting of 12 related questions, the items were scaled into two answers, 1 for an incorrect answer and two score for the correct answer, while the third was parted to observe their practices regarding early colostrum feeding after delivery, and it was consisting of 10 related questions, one score for not practiced and two scores for practiced. For that reason, a female researcher remains with the mother after delivery to observe either practices of colostrum feeding or not, depends on the observation the part of the practice has been filed out. A panel of experts which was consists of related experts were validated the tool, all expert's comments regarding the items of the questionnaire were taken into consideration.

2.6. Characteristics of the samples

Eligible mothers in the hospitals (Hawler teaching Hospital- Erbil, Shaqlawa general Hospital, and Koy-Sanjaq general Hospital) who were fits the criteria and who were interested to participate in the study were respectfully asked to participate in the study, while tired mothers, cesarean section, episiotomy were excluded. The pilot study was done on 10 mothers.

2.7. Data analysis:

The internal reliability of the tool was computed, and the alpha Cronbach correlation was 0.86, which was statistically adequate. The collected data have been analyzed by using the Statistical Package for Social Science (SPSS, Version 23). Descriptive frequency, Chi-square, was used for determining the association

between variables, while an independent t-test was used for identifying the statistically significant differences between the three areas.

3. RESULTS

The study found that most (52.54% and 63.91%) of the mothers in Erbil city and Koy-Sanjaq city had incorrect answers respectively, while 60.32% of mothers in Shaqlawa city answered the information correctly regarding colostrum feeding. In addition, 59.52% in Shaqlawa city, 74.01% in Erbil city, and 62.89% in Koy-Sanjaq city were not achieved colostrum feeding after delivery (Table 1).

Table 1. Assessment of the level of knowledge and practices of mothers in Erbil city, Koy Sanjaq and Shaqlawa districts, regarding colostrum feeding. (No. 400)

| | Shaqlawa (126) NO. (%) | Erbil city (177) NO. (%) | Koy Sanjaq (97) NO. (%) |
|---------------------|------------------------------|--------------------------------|-------------------------------|
| <i>Knowledge</i> | | | |
| <i>incorrect</i> | 50(39.68) | 93 (52.54) | 62 (63.91) |
| <i>Correct</i> | 76 (60.32) | 84 (47.46) | 35 (36.09) |
| <i>Practices</i> | | | |
| <i>Not achieved</i> | 75 (59.52) | 131(74.0 1) | 61 (62.89) |
| <i>Achieved</i> | 51(40.48) | 46 (25.99) | 36 (37.11) |

The study found a statistically significant association between residency areas, socioeconomic status (SES), mother's age, and level of information at p-value 0.002, 0.000, 0.031, and 0.000 respectively (Table 2)

Table 2. Association between mother's knowledge and their biographical information (No. 400)

| <i>knowledge</i> | <i>No information</i> | <i>Poor information</i> | <i>Good information</i> | |
|---------------------------------|-----------------------|-------------------------|-------------------------|-----------------------------|
| <i>Biographical information</i> | <i>NO. (%)</i> | <i>NO.(%)</i> | <i>NO. (%)</i> | <i>χ² (Sig.)</i> |
| <i>Residency areas</i> | | | | |
| <i>Shaqlawa districts</i> | 43(10.75) | 69(17.25) | 14(3.5) | 16.759 (0.002) |
| <i>Erbil city</i> | 80 (20) | 78(19.5) | 19(4.75) | |
| <i>Koy Sanjaq districts</i> | 55(13.75) | 27(6.75) | 15(3.75) | |
| <i>SES</i> | | | | |
| <i>low SES</i> | 28 (7) | 21(5.25) | 0 (0.0) | 37.331 (0.000) |
| <i>Mild SES</i> | 123(30.75) | 103(25.75) | 21(5.25) | |
| <i>High SES</i> | 27(6.75) | 50 (12.5) | 27(6.75) | |
| <i>Mother's age</i> | | | | |
| 15 - 21 | 18(4.50) | 35(8.75) | 10(2.5) | 19.830 (0.031) |
| 22 - 28 | 40 (10) | 46(11.5) | 13(3.25) | |
| 29 - 35 | 69(17.25) | 57(14.25) | 22(5.5) | |
| 36 - 42 | 42(10.5) | 29(7.25) | 3(0.75) | |
| ≥ 43 | 9 (2.25) | 7 (1.75) | 0 (0.0) | |
| <i>LoE</i> | | | | |
| <i>LoE</i> | 26(6.50) | 15 (3) | 0 (0.0) | 34.681 (0.000) |
| <i>Basic</i> | 75(18.75) | 96 (24) | 36 (9) | |
| <i>Secondary</i> | 37(9.25) | 39 (9.75) | 12 (3) | |
| <i>High</i> | 40 (1) | 24 (6) | 0 (0.0) | |

The highly statistically significant association between some of the demographical characteristics such as SES, mothers age, and level of education and mothers' practices at p-value 0.000 respectively, while the non-significant association was observed between mothers' residency areas and mothers' practice (p-value 0.061). (Table 3).

Table 3. Association between mother’s practices regarding colostrum feeding (No. 400)

| Practices | Not achieved | | Poor achieved | | NO. | % |
|---------------------|--------------|-------|---------------|------|-----|------|
| | NO. | % | N O. | % | | |
| <i>Biographical</i> | | | | | | |
| <i>SES**</i> | | | | | | |
| <i>low SES</i> | 38 | 9.50 | 7 | 1.75 | 4 | 1.0 |
| <i>Mild SES</i> | 130 | 32.5 | 63 | 15.7 | 54 | 13.5 |
| <i>High SES</i> | 24 | 6.00 | 34 | 8.5 | 46 | 11.5 |
| <i>ages</i> | | | | | | |
| <i>15 - 21</i> | 11 | 2.75 | 26 | 6.5 | 26 | 6.5 |
| <i>22 - 28</i> | 47 | 11.7 | 27 | 6.7 | 25 | 6.2 |
| <i>29 - 35</i> | 74 | 18.5 | 30 | 7.5 | 44 | 11.0 |
| <i>36 – 42</i> | 48 | 12.00 | 18 | 4.5 | 8 | 2.00 |
| <i>≥43</i> | 12 | 3.00 | 3 | 0.7 | 1 | 0.2 |
| <i>LoE ***</i> | | | | | | |
| <i>Basic</i> | 112 | 28.0 | 91 | 22.7 | 4 | 1.0 |
| <i>Secondary</i> | 47 | 11.7 | 39 | 9.75 | 2 | 0.5 |
| <i>High</i> | 58 | 14.5 | 6 | 1.50 | 0 | 0.0 |

S*= Significant SES= Socio-economic status LoE*** level of education

The study found a significant difference between mothers in Erbil city and Koy-Sanjaq city and between mothers in Shaqlawa city Koy-Sanjaq city regarding the initiate the colostrum feeding at p-value 0.001, 0.044 respectively, with non-significant differences in practices between Erbil city and Shaqlawa city mothers p-value 0.264, and identified the significant differences between Erbil city- Koy-Sanjaq; Erbil and Shaqlawa regarding mothers knowledge concerning colostrum feeding at p-value 0.021 and 0.010 respectively, with non-significant differences in knowledge between mothers in Koy-Sanjaq city and Shaqlawa city at p-value 0.513 (table 4).

Table 4. Compare between knowledge and practice of participants between Erbil and Shaqlawa.

| | Erbil city vs. Koy Sanjaq | | | Erbil city Vs. Shaqlawa | | | Koy Sanjaq vs. Shaqlawa | | |
|------------------|---------------------------|--------|-----------------|-------------------------|--------|-----------------|-------------------------|--------|-----------------|
| | *t | df | Sig. (2-tailed) | t | Df | Sig. (2-tailed) | t | df | Sig. (2-tailed) |
| <i>Practices</i> | 3.47 | 301 | 0.001 | 1.119 | 221 | 0.264 | -2.025 | 272 | 0.044 |
| <i>s</i> | 3.43 | 257.89 | 0.001 | 1.125 | 210.49 | 0.262 | -2.009 | 193.05 | 0.046 |
| <i>X</i> | Mean; 26.96 vs. 24.71 | | | Mean; 26.96 vs. 24.40 | | | Mean; 24.71 VS. 24.40 | | |
| <i>Knowled</i> | 2.31 | 301 | 0.021 | 2.598 | 221 | 0.010 | .656 | 272 | 0.513 |
| <i>ge</i> | 2.33 | 279.52 | 0.020 | 2.559 | 193.49 | 0.011 | .646 | 189.26 | 0.519 |
| <i>X**</i> | Mean; 34.50 vs. 30.59 | | | Mean; 34.50 vs. 28.00 | | | Mean; 30.59 vs 28.00 | | |

*Independent t- test. X** Mean*

4. DISCUSSION

To assess the knowledge and practices of mothers in different three areas, the study found that mothers in

Shaqlawa city were more knowledgeable compared with other two areas of Erbil city, and Koy-Sanjaq city respectively, while all mothers in Erbil city, Koy-Sanjaq city, and Shaqlawa city were not initiated colostrum feeding after their normal vaginal delivery and even

before discharge from the hospital. On 24th January 2008, Shaqlawa hospital staff have received a special training course about initiate breastfeeding and it was supported by the Iraqi Ministry of Health and UNICEF as a preliminary step to promote, protect and support successful BF, this may be a positive factor behind Shaqlawa mother's knowledge and practices (17).

More than half of women know colostrum compared to a few others, in a study done in Nepal, out of the 384 mothers, two-third of mothers had some knowledge, while one-third of mothers hadn't knowledge regarding the health benefits of colostrum. Most mothers offered colostrum feeding while one-third discarded colostrum believing that colostrum was non-milk, non-nutritious, and causing gastritis (15). Around two-thirds of mothers, were obtained regular Knowledge about early BF. Few of the participants knew that the colostrum should be initiated to the newborns this finding was lesser than that of a study conducted by Verma in 2017 who disagreed with the results of the current study and stated that less than half of mothers had given colostrum to their newborns, one third had not given any pre-lacteal feeds (16).

The study reflects that there were statistically significant associations between mother's biographical information such as residency areas, SES, mothers' age, and their level of education and mother's knowledge regarding colostrum feeding. In another hand, the study emphasized a significant association between mother's practices and age, SES, and level of education. Unfortunately, mothers had low information about benefits of colostrum and not achieved colostrum feeding after birth, however, gotten discharge permission from the physician, unfortunately with a discharge without a guideline she health care workers. In a quasi-experimental in 2018, found a significant association between mother level of education, age and, their practice regarding initiate first BF, and supported that baby babies have directly skin-to-skin contact have had stable body temperature, and support the placenta delivery process of the mother (19). Results showed that mothers with secondary education were more likely to be breastfed within one hour, after delivery in comparison to mothers with no education and mothers with primary education (13). The results of the studies indicated that rural mothers practiced early initiation of BF, EBF for the first six months, and longer duration of BF when compared with suburban mothers. The averages of the samples were not feeding colostrum, and it was higher than in the urban area compared with rural mothers (20 & 21). A statistically significant association between age, education, and socio-economic status of respondents with their knowledge of primipara. The current study found a significant difference between mothers' practices in Erbil city and Koy-Sanjaq city; reveals a significant difference between practice among

mothers in Erbil city and Koy-Sanjaq, also significant difference was found between Koy Sanja and Shaqlawa city concerning achieved colostrum feeding, while there were statistically significant differences were found between mothers in Erbil city and Shaqlawa city, Shaqlawa and Koy-Sanjaq city respectively, mothers with the non-statistically difference between Shaqlawa city and Koy-Sanjaq city mothers regarding knowledge about colostrum feeding respectively. The rate of women initiated early colostrum and EBF increased obviously between 2002 to 2017 (20). Mothers in Erbil were the least likely to initiate the BF within the first hours (6). A study done by Acharya, the results of the logistic regression analysis data showed early colostrum feeding was higher among mothers with primary education, and lesser-seen among secondary or higher education, compared to the mothers with no education [14]. The current results are agreed by a study was done among Indonesian mothers between two different areas (Java and Bali) and found significant differences between mothers who were from among mothers with higher quantiles, and worked in professional sectors. While women who were in work had lower initiate EBF prevalence, compared to housewives or self-employed employees. Women in Java and Bali started initiation of colostrum feeding better compared to women in Sumatra (20). The incidence of EBF ratio was very low in both rural and urban areas in Nepal, almost exclusive to BF. Colostrum feeding was initiation (\leq two days after birth) positively and it is statistically significantly associated with exclusive BF, mother's education > 12 years, and mother's lack of knowledge about the importance of colostrum were negatively associated with EBF (14 in a study was done in Erbil, and found that the skin-to-skin contact initiate BF and confirmed stabilization of body temperature (19). Mothers who live in urban mothers and who had higher knowledge regarding BF compared with suburban mothers have a favorable attitude towards colostrum feeding (20 & 21).

5. CONCLUSIONS

The study found that the mothers in Shaqlawa city were more knowledgeable compared with Erbil city and Koy-Sanjaq city, but all areas were less practice regarding colostrum feeding. The study recommended a health educational program regarding benefits and initiate colostrum feeding for the mothers in Erbil Governorate during delivery.

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