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Assessment of knowledge and Attitude of Mothers about Newborn care in Fayoum Governorate

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Abstract

Introduction: Nearly 7.7 million children under the age of five die annually on a global scale; approximately 3.1 million newborns die during the neonatal period, and almost all of these fatalities (99%) occur in developing nations.

Aim of the study: To evaluate the knowledge, attitudes, and behaviors of mothers in the Fayoum Governorate.

Subjects and Methods: A cross-sectional study will include 400 mothers in the Fayoum governorate. Newborn care knowledge and attitude will be observed among 400 mothers. A structured interview questionnaire was used to collect the data.

Results: About half of the mothers (48.0%) reported that they visited the prenatal clinic. The majority of them 170/180 (94.4%) received a message on breastfeeding followed by umbilical cord care (55.6%), and received anti-tetanus toxoid during this or previous pregnancy Most mothers reported that their neonates (68.0%) had been delivered by CS. As regards the attitude of mothers about dangerous signs of the neonate, most of the mothers specified an appositive attitude with a percentage over 50% in all topics.

Conclusion: The prevention of neonatal mortality is reliant on maternal knowledge and practice regarding newborn care. Some sociodemographic variables may be associated with the knowledge and practices of mothers. Educating the mothers as well as their family members is crucial.

Keywords: Neonatal career; Postnatal mothers; Knowledge-Attitude-Practice (KAP).

1. Introduction

"newborn" and "neonatal" both refer to the first 28 days of existence. The risk of neonatal mortality is highest at the time of birth and decreases in the days and weeks that follow. Up to 36% of neonatal deaths occur within the first 24 hours of life, and nearly 73% within the first week.4 This is also when the majority of maternal deaths occur, which makes labor, delivery, and the early postnatal period dangerous for both mothers and neonates [1].

Despite a decline in the percentage of infants who die before their fifth birthday, neonatal mortality remains significant. Annually, neonates account for nearly 40% of all fatalities among children under the age of five. The overwhelming majority (99%) of neonatal deaths occur in developing countries [2].

Increasing access to maternal and newborn health (MNH) services and vital medical products may be the most effective way to improve these statistics. About one-third (32%) of all mothers and infants worldwide do not receive specialized care at birth, and three-quarters of all babies born outside a health facility do not receive an early postnatal care visit [3].

Numerous variables influence perinatal mortality, as demonstrated by prior research. Young maternal age, prime- or grand-multiparity, brief birth intervals, maternal health complications, and lack of breastfeeding are maternal risk factors for neonatal mortality [4].

Inadequate care during pregnancy, delivery, and the postpartum period [5], as well as rural or low socioeconomic community residence [6], were also associated with neonatal mortality.

Most risk factors for the top three causes of neonatal mortality are preventable or treatable. Many, however, cannot be predicted and rely on preparedness throughout pregnancy, childbirth, and the postpartum period to access prompt, high-quality care when necessary and to engage in healthy household practices.

This study aimed to assess the knowledge and attitudes of mothers regarding neonatal care and danger signs.

2. Subjects and Methods:

1.1. Subjects

A cross-sectional design was conducted on 400 mothers of newborns in Fayoum Governorate from 2018 to 2020 to assess the mother's knowledge and practice regarding neonatal care.

1.2. Study timeframe

This study went through three phases:

- Preparatory phase: for the preparation of study tools.
- The second phase: was the data collection, which extended from [start date] to [end date]. Entry and analysis of collected data were done through this phase.
- The third phase: was the interpretation and writing of the thesis, which ended on [end date].

1.3. Data collection

A structured close-ended questionnaire was used to interview mothers for assessing their knowledge and practice regarding neonatal care and dangerous signs of neonates. The initial questionnaire draft was designed based on the literature review, and modifications were made. The final version of the questionnaire contains three parts:

- The first part comprised the basic characteristics of the mothers and their neonates.
- The second part included questions regarding mothers' knowledge regarding neonatal care.
- The third part included questions regarding attitude and practice about neonatal care. The last part comprised questions about mothers' attitude regarding dangerous neonatal signs.

The questionnaires were pre-coded for data entry. Each statement of knowledge regarding neonatal care was measured, with each true point scored one, with a maximum score of [maximum score]. Regarding attitude and practice, each adequate practice scored one, with a maximum score. However, every point on attitude about dangerous signs was measured on a three-point Likert scale, with important scored as (2), neutral as (1), and not important as (0). The maximum total score was [maximum total score].

1.4. Data presentation and analysis

The collected data were organized, tabulated, and statistically analyzed utilizing SPSS software version 22 (SPSS Inc., USA). We calculated the mean and standard deviation (SD) for quantitative data. When

applicable, an independent t-test or one-way ANOVA was used to test the differences in mean values of assessed scores between several study variables. Pearson correlation was used to establish a relationship between mother score and other quantitative variables. The number and percent distribution were calculated for qualitative data. A significance level of $P \leq 0.05$ was adopted for interpreting the results of significance tests.

2. Results

Figures 1-3 and Table 1 demonstrate that more than half of mothers, 220 out of 400 (55%), received health education messages during antenatal care. The majority of them, 170 out of 180 (94.4%), received messages on breastfeeding, followed by umbilical cord care (55.6%), vaccination (43.3%), and eye care (30.0%). In one-fifth, 36 out of 180 (20.0%), the family was the source of information, followed by nurses and physicians at 17.8% and 15.6%, respectively. Likewise, most of the mothers, 264 out of 400 (66%), received health education messages during their postnatal care. The majority of them, 236 out of 264 (89.4%), received messages about breastfeeding, followed by umbilical cord care (79.7%), eye care (61.0%), and vaccination (52.0%). In most mothers, 164 out of 264 (62.1%), the physician was the source of information, followed by nurses (37.1%) and family (20.5%) (**Figure 4**).

Table 1: Demographic data of the study mothers (N=400).

	Variables	**Frequency**
Age		28.4±5.2
Occupation	Working	160 (40%)
	Not-working	240 (60%)
Education	Illiterate + primary	174 (43.5%)
	Preparatory + secondary	154 (38.5%)
	University	72 (18%)
Residence	Rural	204 (51%)
	Urban	196 (49%)

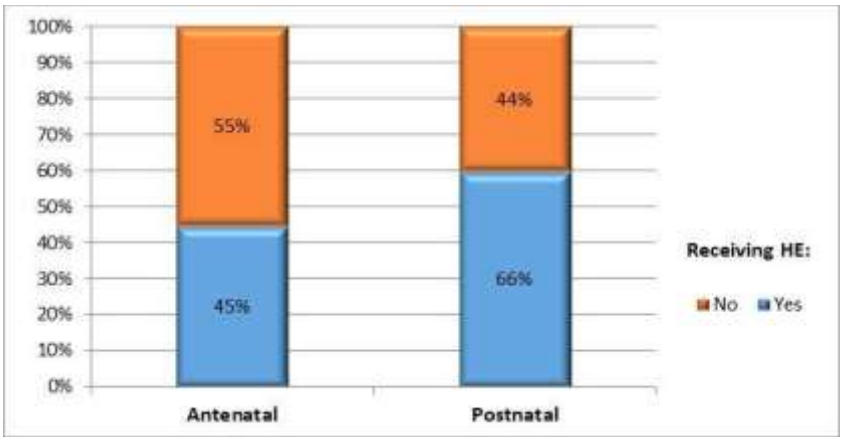

Figure 1: Receiving health education.

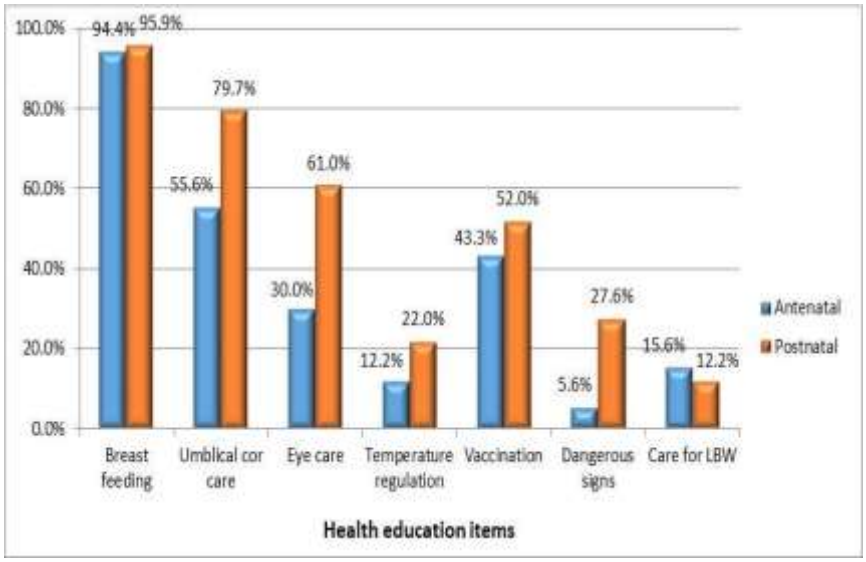

Figure 2: Health education items.

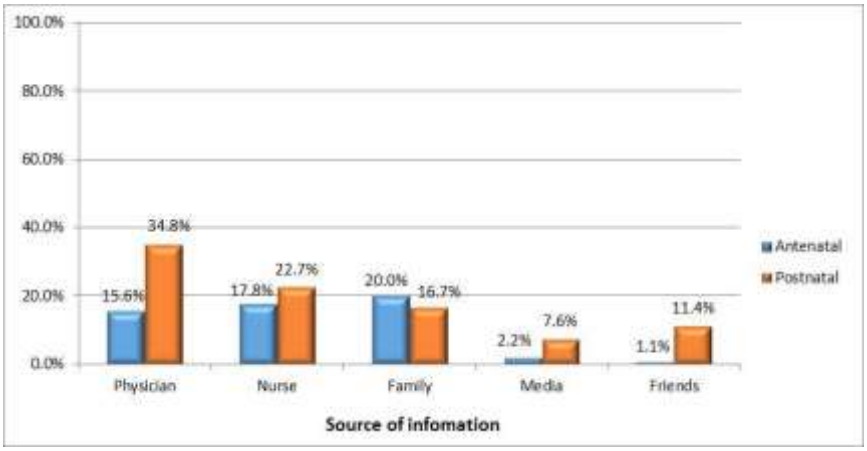

Figure 3: Source of information.

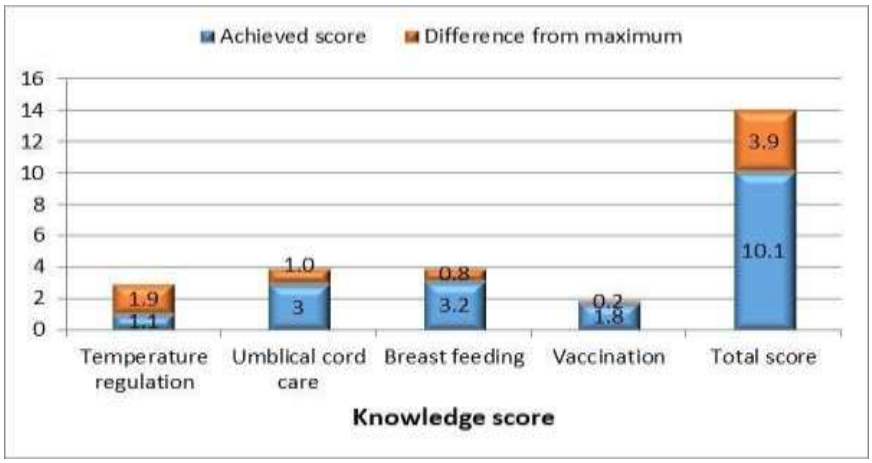

Figure 4: Knowledge score.

Figure 5 shows the true knowledge responses and scores of the mothers regarding different aspects of neonatal care. The total score of knowledge was mostly good, representing a total score of 10.1 ± 1.9 (the expected total score was 14). Most mothers provided true answers with a percentage over 60% in all points except for two questions about after-birth warming and appropriate time of bathing. Mother from urban areas (10.4 ± 1.9) had a higher total knowledge score than those from rural areas (9.8 ± 1.9), with a substantial difference, p = 0.003. Also, mothers who visited the prenatal clinic had substantially higher overall knowledge scores than those who did not (10.3 ± 2 vs. 9.9 ± 1.8), p = 0.023. However, the difference in knowledge scores according to other characteristics was not statistically significant with $p > 0.050$.

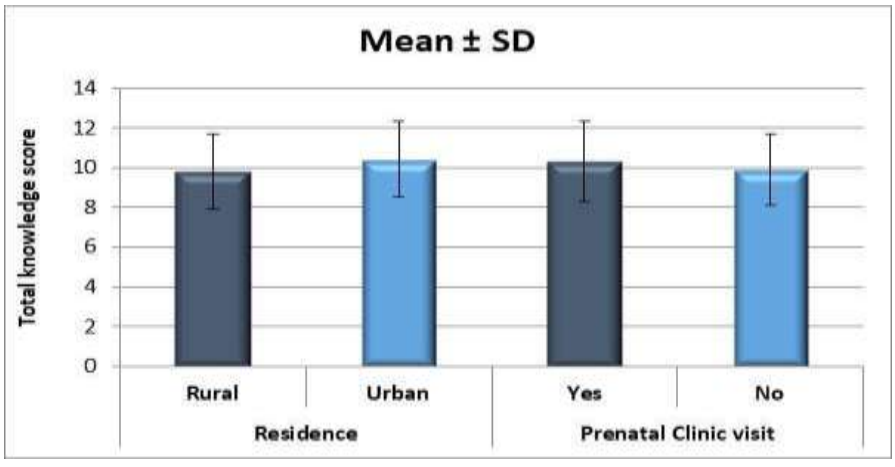

Figure 5: Total knowledge score according to residence and prenatal clinic visit.

As shown in Table 2, the knowledge score of mothers regarding neonatal care was positively correlated with the total number of children (r = 0.133, p = 0.008) and negatively correlated with the month of their most recent visit (r=-0.334, p <0.0001).

Table 2: Correlation between total knowledge score and other variables.

Total knowledge score	**R**	***P-value***
Mother age	0.02	0.692
Total Number of children	0.133	0.008*
Number of visits	0.125	0.083
In what month was last visit?	-0.334	<0.001*

**Significant.*

Figure 6 displays the adequate practice responses and scores of the mothers regarding several items of neonatal care. The total score of practice was high, signifying a total score of 8.6 ± 1.2 (the expected total score was 11). Most mothers provided true answers with a percentage over 50% in all points except for the question related to the frequency of bathing.

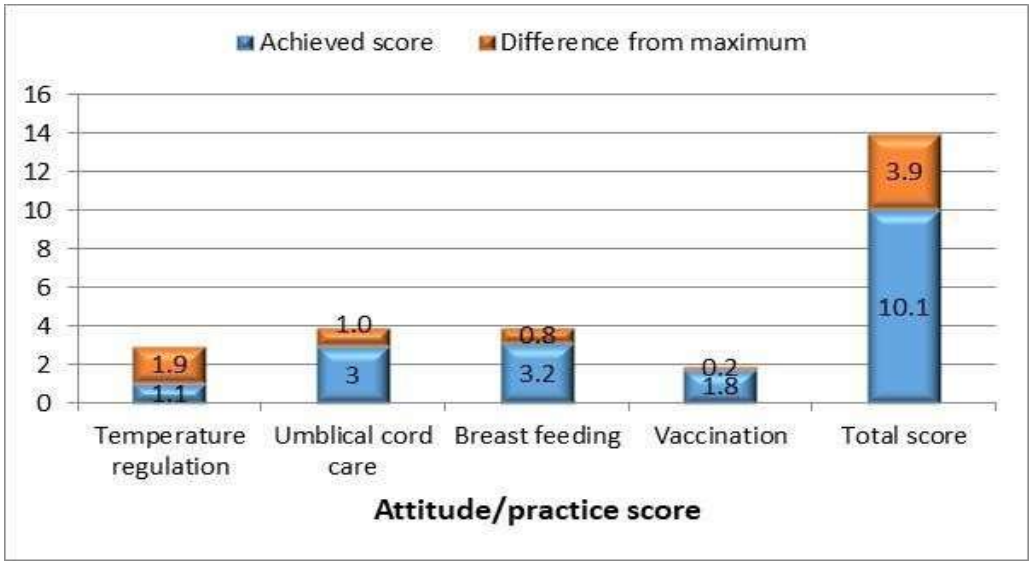

Figure 6: Attitude/practice score.

As shown in **Figure 7**, there was a statistically significant difference in practice score in relation to mother's education (p = 0.009), prenatal clinic visit ($p < 0.0001$), education during pregnancy ($p < 0.0001$), and postnatal health education ($p = 0.008$). On the other hand, the difference in practice score according to remaining characteristics was not statistically significant with $p > 0.050$.

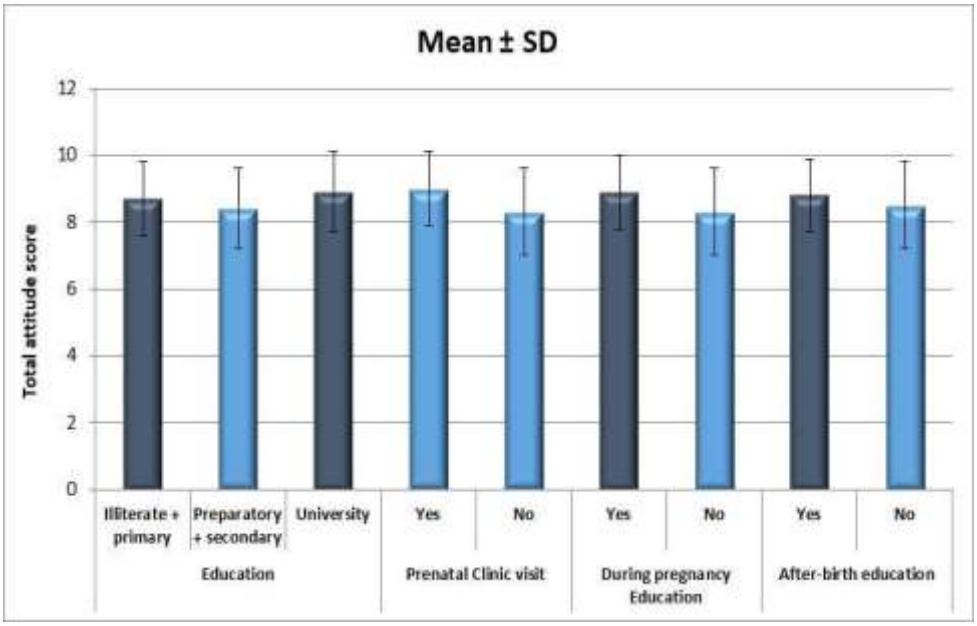

Figure 7: Attitude/practice score in relation to different characteristics

The total practice score was positively correlated with the knowledge score of mothers on neonatal care, which was statistically significant (r = 0.346, $p < 0.0001$), as shown in **Table 3.**

Table 3: Correlation between total practice score and other variables.

Total Practice score	**R**	***P-value***
Total knowledge score	0.346	<0.001*
Mother age	-0.037	0.458
Total Number of children	-0.051	0.314
Number of visits	-0.114	0.114
In what month was last visit?	0.121	0.092

**Significant.*

Regarding the attitude of mothers about dangerous signs of the neonate, the total score was good, representing a total score of 19.4 ± 2.9 (the expected total score was 24). Most mothers expressed a positive attitude with a percentage over 50% in all topics, except for the following two questions: previously active baby gets inactive and flatulence, as shown in **Table 4**. As depicted in **Figure 8**, there were statistically significant differences in attitude score based on maternal education (p = 0.016), residence (p = 0.001), education during pregnancy (p = 0.002), and postpartum health education (p < 0.0001). However, there was no statistically substantial difference among the scores for attitude and other characteristics, with p > 0.050.

Table 4: Mothers attitude regarding different items of neonatal dangerous signs.

Attitude	Important	Uncertain	Not important
Yellowing of eye palms or soles	400 (100%)	0 (0%)	0 (0%)
Red umbilicus discharging or Redness of surrounding area	328 (82%)	72 (18%)	0 (0%)
Eyes welling conjunctivitis redness Pus discharge	214 (53.5%)	176 (44%)	10 (2.5%)
Baby stops breastfeeding	252 (63%)	142 (35.5%)	6 (1.5%)
Abnormal movements of eyes and limbs	262 (65.5%)	158 (39.5%)	16 (4%)
Breathing difficulty	346 (86.5%)	52 (13%)	2 (0.5%)
Fever/hyperthermia	308 (77%)	84 (21%)	8 (2%)
Cold/hypothermia	232 (58%)	154 (38.5%)	14 (3.5%)
Previously active baby gets inactive	164 (41%)	200 (50%)	36 (9%)
Flatulence	98 (24.5%)	188 (47%)	114 (28.5%)
Vomiting	296 (74%)	92 (23%)	12 (3%)
Diarrhea	312 (78%)	84 (21%)	4 (1%)
Total maximum score= 24	Achieved score =19.4±2.9		

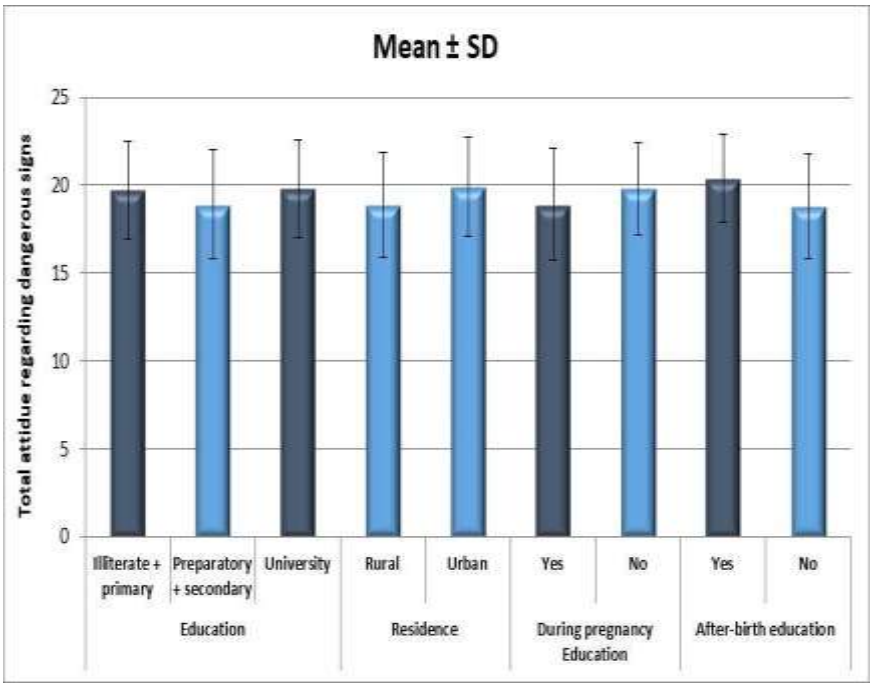

Figure 8: Total score of attitudes about dangerous signs in relation to different characteristics.

3. Discussion

In order to protect a newborn from developing hypothermia, the World Health Organization advises that skin-to-skin contact, immediate placement on the mother's chest, and delayed bathing with a minimum six-hour interval after birth are all essential. It is widely established that preterm bathing increases the likelihood of newborn morbidity, including hypothermia and death [7].

The mothers in our study provide honest evidence of their understanding of and performance on a variety of infant care tasks. The final knowledge score of 10.1 ± 1.9 was close to expectations (14 is the minimum acceptable level). However, a lack of understanding and practice was found in a study done in rural Guinea-Bissau, West Africa. Mothers' ages ranged from 18 to 40 years, with a mean of 28.4 ± 5.2 years.

The present research presents a comprehensive picture of mothers' newborn care knowledge, attitudes, and practices to aid in the development of evidence-based interventions to achieve SDG objective three relating to newborn survival in Pakistan. In terms of thermal protection, the World Health Organization (WHO) recommends that skin-to-skin contact, immediate placement of the newborn on the mother's chest, and delayed bathing with a minimum 6-hour interval after birth are critical in preventing the neonatal

complication of hypothermia. Early bathing is a known risk factor for newborn morbidity and mortality, including hypothermia and death.

The distribution of the sample based on educational standing is as follows: 9% illiterate, 20.5% primary incomplete, 14% primary complete, 13.5% preparatory, 11% secondary incomplete, 14% secondary complete, and 18% university. 51% of the sample's residences are rural, while 49% are urban. 19% of mothers in this study have good knowledge about after-birth warming, and 72% of mothers practice skin-to-skin contact with their babies. These results are comparable to those of a study conducted in North Ethiopia, where 99.3% of participants had the knowledge and 72.1% practiced skin-to-skin contact with their babies [8]. In research conducted in Pakistan, more than fifty-one percent of respondents reported bathing their neonates within 6 hours, compared to 32.5% of mothers who reported bathing their newborns within hours after birth [7].

In the current research, 92.5% of respondents stated that a new blade was used to sever the umbilical cord. Nearly 83.5% of respondents reported using chlorhexidine; these results were higher than those of a report conducted in urban areas of Rohtak Haryana, India, where a new blade was used in 88.6% of deliveries and 40% of mothers used traditional substances on the umbilical cord [9].

In terms of breastfeeding awareness, our survey found that 54.6% of moms were aware that nursing should begin within an hour of the baby's birth. Pre-lacteal feed should not be given to babies, according to 65.5% of respondents, but colostrum should be given to newborns, according to 100%. Sixty-one percent of moms were aware that infants should be nursed exclusively for six months. These findings outperform those of a Pakistani study, in which 54.6% of moms were aware that breastfeeding should begin within an hour of birth. Pre-lacteal feed should not be given to babies, according to 57.5% of respondents, but colostrum should be given to newborns, according to 55.6%. This gap may be due to greater access to healthcare and higher education in urban areas versus those in the countryside.

Approximately 95.5% of mothers have a positive knowledge and attitude towards immunization, in contrast to the moderate attitude observed among mothers in our study [10]. Although immunizations are not considered part of the standard of care for newborns, it is essential that mothers be given a thorough introduction to the topic

before they leave the hospital, as numerous studies have shown that improved knowledge about vaccines leads to higher rates of vaccination uptake [10].

The vast majority of moms have some idea of the typical warning signs of neonatal danger. Over eighty-five percent of mother's regard trouble breathing as a sign of danger, along with seventy-seven percent who consider overheating and fifty-eight percent who consider jaundice as a sign of risk. There is universal agreement that jaundice is cause for concern, but only 28% feel the same way about an enlarged belly. Moreover, over half of the women polled had a favorable outlook on all themes except for when their infant suddenly stopped moving around and when their baby had flatulence. The Ethiopian study found less impressive results than this one [11].

Only 11.67 percent of mothers were found to have sufficient awareness (mothers who mentioned six or more newborn danger signals). Findings show that 883 percent of women had only a basic understanding of infant risk factors. This is a slight improvement over the 84.5 percent of Kenyan women who could not name at least three of eight neonatal risk indicators [12]. Similarly, in rural Southwestern Uganda, mothers' awareness of even a single newborn risk factor was shown to be low [13]. This may be due to inadequate dissemination of danger sign information to mothers during the antenatal and postnatal periods. The proximity of mothers to health institutions can also influence their utilization of ANC and PNC services; in our study, only 45 percent of mothers received antenatal care education. 94% of mothers received information on breastfeeding, while 565 also received information on umbilical cord care 17 percent of them received information from clinicians & 20 percent from family While 66 percent of mothers received antenatal care education, 95.9 percent received information about breastfeeding and 79.1 percent received information about umbilical cord care. The majority of mothers received this information from their physician (62.1%) and their family (20.5%). A study conducted in Ethiopia revealed that 24.4% of mothers travel greater than 20 kilometers to receive PNC services at Wolda general hospital [11]. In our research, the majority of mothers, 272/400 (68.0%), reported that their newborns were born via cesarean section, whereas in an Ethiopian study, approximately 16.2% of women delivered at home (outside the formal health system) [11].

Conclusion

Mothers who did not receive any neonatal education or who did not attend all of their antenatal clinic sessions were more likely to have insufficient knowledge of basic newborn care practices after giving birth. When moms are educated about neonatal care in antenatal clinics, they retain that information in the postpartum period. The most important takeaway from this study is that 60% of mothers have sufficient knowledge of fundamentals of baby care. Sociodemographic and maternal characteristics such as mother's occupation, parity, and the number of antenatal visits were significantly correlated with mother's knowledge score. Mothers' understanding of newborn care practices can be improved by education in the health area.

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Ethical Approval Statement: The faculty of Medicine Research Ethical committee reviewed this study. The researcher informed the participants of the study's objectives, the confidentiality of their information, and their right to decline participation.

Conflicts of Interest: All authors declare no conflict of interest.

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