



Original Article



Newborn Care Practices and Perceptions among Mothers in Islamabad, Pakistan: A Mixed Method Approach

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ABSTRACT

The levels of neonatal mortality in Pakistan are also among the highest in the world, and the factors that define the practice of newborn care are strong and culturally determined.

Objectives: To explain maternal attitude and practice of newborn care in Islamabad, focusing on cultural beliefs and socio-economic factors affecting the health conditions of neonatal care.

Methods: Mixed-method design was used, where quantitative data were collected by use of 384 mothers of infants aged 0-6 months on quantitative questionnaires, and qualitative data on 10 in-depth interviews. Data analysis was done through thematic analysis on qualitative results and descriptive and inferential statistics, i.e., ANOVA and chi-square on the quantitative results.

Results: Traditional practices, the views of the elders, and old cultures were mostly prevalent in medical advice. The quantitative data showed significant associations between demographic factors, such as maternal age, education, parity, and delivery place, with newborn care practices, i.e., the initiation of breastfeeding, colostrum usage, and skin-to-skin contact. The interviews also revealed that thematic analysis of the interviews pointed to the role of family customs and societal norms in such practices. **Conclusions:** The evidence taken altogether indicates that there is an immediate necessity to have evidence-based and culturally responsive interventions that are context-specific.

INTRODUCTION

The twenty-eight days of neonatal life are a critical period in the life of the child [1]. Pakistan is ranked among the countries with a high neonatal mortality rate of 41 deaths per 1,000 live births and the under-five mortality rate of 67 deaths per 1,000 live births [2]. The World Health Organization (WHO) identifies five main recommendations of early newborn care (ENC) that include hygienic cord care, optimum thermal regulation, infection prevention, feeding, and the early initiation of breastfeeding [3]. The introduction of these new vital practices of caring for the

newborn would help as much as decrease neonatal mortality by up to 30 per cent [4]. In the guidelines offered by WHO, in cases when there is no appropriate antiseptic to apply, it is better to use dry cord care to preserve hygiene and avoid umbilical stump infections [5]. Lack of sanitary cord care practices also leads to the increased rate of cord infection in developing countries [6]. Some of the early care practices that are included in thermal care are skin contact, delaying bathing in the first 24 hours, warming the baby, using a clean towel, and wrapping the baby. The first



bath on a newborn eliminates vernix and maternal bacteria but interrupts the connection between skin and mother that causes hypothermia and hypoglycemia. It can also interfere with the crawling reflex, which might slow down the establishment of good breastfeeding [7]. Other international organizations, such as the WHO, propose the early initiation of breastfeeding (EIBF) during the first hour of birth. Late breastfeeding initiation may greatly affect the probability of neonatal death, and the probability multiplies by 33 per cent upon breastfeeding initiation being improper [8]. Another problem faced by the country is the inability to conduct routine newborn screening and parental counseling programs, which are critical in enhancing the neonatal outcomes [9]. Although the WHO recommends that at least 5 percent of the GDP should be spent on health, the Government of Pakistan has always spent about 0.5 percent of its GDP on the same sector [10]. To minimize the death of newborns, improve the rate of facility delivery, and provide improved care to the premature babies and those born with an infection. Enhancing prenatal nutrition and practicing breastfeeding and neonatal resuscitation, as well as enabling maternal education and managing health facilities, will prove to be useful in meeting these goals [11]. In rural communities, most of the mothers still stick to their cultural ways of doing things, including the use of herbal medicines as well as postponing the first bath of the baby because they believe that the practices will safeguard the baby. Therefore, cultural expectations on the care of a newborn baby may undermine the efficacy of contemporary healthcare services and postpone the important steps of neonatal care [12]. The rural setups are especially not spared, as most of them do not have proper medical facilities and skilled medics. The lack of healthcare access, coupled with the presence of socio-cultural dependence on traditional practices, puts the newborn at risk of health complications and further raises the mortality rates among these communities [13]. Studies indicate that maternal education has a close relationship with the heightened level of hygiene, good nutrition, and the need to engage in early and exclusive breastfeeding; these factors reduce cases of neonatal mortality and morbidity [14]. Female educated mothers would be less inclined to rely on untrained traditional birth attendants or follow outdated practices, including refusing to breastfeed the baby colostrum or using unsafe substances on the umbilical cord. Research has shown that maternal literacy interventions in low- and middle-income countries improve neonatal health outcomes through creating awareness and busting myths [15].

This study aimed to analyze the common practices of newborn care among mothers. To gain insights into the

cultural and personal beliefs that determine the choice and practice of mothers in terms of newborn care, and also to determine the extent of awareness of mothers on the necessity of newborn care practices.

METHODS

The proposed study was a mixed-methods approach that used both qualitative and quantitative methods in the Health Services Academy, Islamabad. The research period was between September and December 2024. Written informed consent was taken. The Health Services Academy, Islamabad, gave ethical approval. Complete information regarding the study was supplied to all the participants. In-depth interviews were conducted to obtain qualitative data with the help of the Theory of Planned Behavior as the guiding model. Purposive sampling was used to gather qualitative data, which was that of mothers in Islamabad who had a baby aged between 1 and 6 months. Data saturation was the concept that was used to determine the sample size of this study. To determine the sample size in the quantitative part of the research, the Cochran formula will be used: $n = z^2(p)(1-p)/e^2$. The sample size needed to conduct this study, at a 95% confidence level and a 5% margin of error, will be around 384 participants. The assumption of a large population has been used in this calculation, with the proportion (p) being estimated to be 0.5. The study has chosen to use in-depth interviews because they would explore cultural and personal beliefs and thorough understanding of the thoughts and feelings of participants, as well as personal experiences in their own words. Also, a structured questionnaire was used to acquire quantitative data. Thematic analysis: Braun and Clarke presented a six-stage thematic analysis framework on which qualitative data were analyzed. In this study, SPSS version 25.0 was the statistical package used in analysing data in terms of quantitative analysis.

RESULTS

Theme 1: Cultural Beliefs and Traditional Practices addressing Newborn Health; Families tend to adhere to the traditional practices, such as applying desi ghee or using spiritual healing, on the belief that the traditional practices will protect and cure babies. Theme 2: The power of the Elders, particularly mothers-in-law, is very influential in newborn care, and their traditional advice is not subject to question or even medical care. Theme 3: Cultural Perceptions of Illness and Mortality; Illness is often linked to fate or divine punishment, and many parents distrust modern medicine, preferring home remedies instead. Theme 4: Cultural Barriers to Healthcare Access; Dependence on traditional healing and limited decision-making power for mothers delays medical treatment,

sometimes leading to serious outcomes for newborns (Table 1).

Table 1: Qualitative Analysis

Theme 1: Cultural Beliefs and Traditional Practices Impacting Newborn Health	
Traditional Practices and Beliefs	"I applied desi ghee on my son's navel because my mother-in-law said that applying desi ghee helps the wound heal faster."
Spiritual and Religious Practices	"Such a small baby should not be taken to the hospital. Treatment should be done at home. When my baby used to fall sick, I would get spiritual healing (dum) from the local religious teacher (Qari Saab)."
Theme 2: Influence of the Elders	
Dominance of Elders' Opinions	"I don't argue with my mother-in-law. If she says that mustard oil will make the baby better, I let her do the massage."
Generational Transmission	"In our family, it is a tradition to place a heated brick near the baby during winter to protect them from the cold."
Theme 3: Cultural Perceptions of Illness and Mortality	
Fatalistic Attitudes towards Newborn Illness	"When my child fell ill, our neighbor said it was a punishment for past sins and that I should seek forgiveness so the child would get better."
Stigmatization of Modern Medical Practices	"Medicines can be very harmful for small children. Instead of helping, they can cause more harm. That's why, when my child falls ill, I don't go to the doctor. I use home remedies instead."
Reliance on Traditional Healing	"Once, my daughter had trouble breathing. My mother-in-law burned some herbs and placed them near her. When her condition didn't improve, we went to the hospital."
Gender Dynamics and Decision-Making	"My child cried continuously for two days, but my husband and mother-in-law said that babies cry all the time. Because of that negligence, I lost my child."

Quantitative results were given that describe the demographic characteristics of the study population (Table 2).

Table 2: Demographic Characteristics of the Study Population (n=384)

Characteristics	n (%)
Mothers' Age in Years	
Mean $\pm$ SD	30 $\pm$ 4.7
20-25 Years	41 (10.7%)
26-30 Years	170 (44.3%)
31-35 Years	114 (29.7%)
36 and Above	59 (15.4%)
Number of Children	
Mean $\pm$ SD	2 $\pm$ 0.94
One Child	127 (33.1%)
Two Children	155 (40.4%)
Three Children	64 (16.7%)
More Than Three	38 (9.9%)
Age of Baby in Months	
1-3 Months	155 (40.4%)
4-6 Months	229 (59.6%)
Place of Delivery	
Hospital	168 (43.8%)
Home	216 (56.3%)
Education Level	
Illiterate	64 (16.7%)
Matriculation	115 (29.9%)
Intermediate	54 (14.1%)
Graduation	151 (39.3%)
Occupation	
Government Employee	52 (13.5%)
Corporate Employee	82 (21.4%)

No Job	250 (65.1%)
Place of Residence	
Rural	224 (58.3%)
Urban	160 (41.7%)

Findings show that the awareness of essential newborn care practices among mothers in the study reveals significant gaps. Less than half (43.2%) recognized the importance of initiating breastfeeding within the first hour. Exclusive breastfeeding for the first six months had relatively higher support (53.4%). Only 38.0% supported delaying the first bath for 24 hours (Table 3).

Table 3: Percentage Distribution of Awareness on Essential Newborn Care

Characteristics	n (%)
First Breastfeeding Should Be Between 30 minutes and an Hour After Delivery	
Agree	166 (43.2%)
Disagree	65 (16.9%)
Unaware	153 (39.8%)
Newborns Should Be Fed with First Yellowish Milk (Colostrum)	
Agree	172 (44.8%)
Disagree	74 (19.3%)
Unaware	138 (35.9%)
Newborns Should be Exclusively Breastfed from Birth to Six Months	
Agree	205 (53.4%)
Disagree	46 (12.0%)
Unaware	133 (34.6%)
The Cord of Your Baby Must Always be Dressed and Covered	
Agree	179 (46.6%)
Disagree	71 (18.5%)
Unaware	134 (34.9%)

Bleeding, Discharges, Redness, and Swelling in Your Baby's Cord Is Normal	
Agree	62 (16.1%)
Disagree	169 (44.0%)
Unaware	153 (39.8%)
At Least 24 Hours After the Baby's Birth, the First Bath Must be Postponed	
Agree	146 (38.0%)
Disagree	103 (26.8%)
Unaware	135 (35.2%)
The Newborn Must Be Wrapped at All Times and Kept in Close Proximity to the Mother's Skin	
Agree	192 (50.0%)
Disagree	44 (11.5%)
Unaware	148 (38.5%)

The data reveal significant deviations from WHO guidelines in newborn care practices. Only 33.9% of mothers exclusively breastfeed. Additionally, 60.9% of mother's use gripe water, contrary to WHO recommendations. Cord care practices show similar concerns, with 22.1% using knives and 3.1% applying mud or saliva. While 52.9% of mothers delay the first bath (Table 4).

Table 4: Percentage Distribution of Practices on Essential Newborn Care

Characteristics	n (%)
Which Kind of Breastfeeding Do You Use?	
Exclusive	130 (33.9%)
Mixed	254 (66.1%)
How Soon After Giving Birth Did You Start Breastfeeding?	
Within an Hour	86 (22.4%)
After an Hour	125 (32.6%)
After 2 Hours	47 (12.2%)
What Sanitary Procedures Do You Follow Prior to Nursing?	
Three Hours and Above	126 (32.8%)
Bath At Least Once A Day	51 (13.3%)
Apply Lotion or Oils on the Breast	52 (13.5%)
Wash Hands	68 (17.7%)
Clean Breast with Towel	49 (12.8%)
Nothing	164 (42.7%)
What Fluid Is Given to the Baby Besides Breast Milk	
Plain Water	16 (4.2%)

Table 5: Chi-Square Analysis

Outcome Variable	No. of Associations Tested	Significant (p<0.05)	Non-Significant	Key Significant Predictors
Type of Breastfeeding	6	4	2	Age, No. of children, Education, Residence
Timing of Breastfeeding Initiation	6	6	0	All variables (e.g., age, place of delivery, occupation)
Reason for Delayed Breastfeeding	6	6	0	All variables
Colostrum Feeding	6	5	1	Education, Place of delivery, Occupation, Residence
Cord Cutting Method	6	6	0	All variables
Cord Tying Material	6	6	0	All variables
Cord Dressing Substance	6	6	0	All variables

Sugar Water	40 (10.4%)
Gripe Water	234 (60.9%)
Others	94 (24.5%)
What Was Used to Cut the Cord After Delivery	
Scissors	176 (45.8%)
Blade	117 (30.5%)
Knife	85 (22.1%)
Others	6 (1.6%)
What Was Used to Tie the Cord After Birth	
String	92 (24.0%)
Rubber Band	99 (25.8%)
Cord Clamp	132 (34.4%)
Wire	61 (15.9%)
Which Primary Drug or Substance Do You Use for Covering Your Baby's Cord?	
Methylated spirit	171 (44.5%)
Mud	12 (3.1%)
Saliva	16 (4.2%)
Mustard oil	168 (43.8%)
Others	17 (4.4%)
Prior to Tending to the Baby's Cord, Do You Sanitize Your Hands?	
Always	67 (17.4%)
Sometimes	121 (31.5%)
Scarcely	43 (11.2%)
Not At All	153 (39.8%)
When Did You Give the Baby Its First Bath After Birth	
Immediately	65 (16.9%)
6 Hours	41 (10.7%)
24 Hours	203 (52.9%)
48 Hours	70 (18.2%)
Others	5 (1.3%)

A chi-square analysis was performed to examine the relationship between various socio-demographic characteristics and newborn care practices. The findings indicated that most newborn care practices had statistically significant associations with respondents' demographic profiles. Specifically, variables such as education level, number of children, place of delivery, occupation, age group, and place of residence consistently influenced caregiving behaviors (Table 5).

Time of First Bath	6	6	0	All variables
Belief: Baby Should Be Wrapped and Held	6	5	1	Age, Education, Residence, Occupation

DISCUSSION

This paper offers important observations regarding the cultural beliefs and practices of newborn care in Islamabad, which will serve as important determinants of the ever-brooding high neonatal mortality rate in Pakistan. It has been revealed that the practices such as the use of ghee on the umbilical stump and postponement of the first bath are culturally based yet can be very dangerous and prone to health complications including infections and death of the child [16]. The results revealed that spiritual and religious beliefs, such as the use of spiritual healers, amulets and prayers, provide emotional support, but postpone important medical procedures, which raise the mortality rate of newborns. The same idea was expressed in another study that claimed that religious beliefs have been associated with the dependency on the non-official information, distrust to scientific results, and reluctance or avoidance of vaccination [17]. The study findings revealed the level of control of the elders, especially the elder women and male authority figures, on newborn care practices in Pakistan is overwhelming. One of the studies found that the failure of mothers to express their opinions may have a negative effect on their health and the health of their newborn, which may affect their overall well-being [18]. The results showed that there were major obstacles to the use of the modern healthcare services, especially in the rural environment or culturally conservative ones. A large percentage of the research participants raised issues regarding biomedical interventions as they felt that they were not as good as traditional remedies. They felt that biomedical care is prone to more side effects, and they would rather resort to local or traditional medical care [19]. The incorporation of these figures into healthcare campaigns has a possibility of closing the gap between the conventional beliefs and medical practice. These results indicated that fewer than half (43.2) of the mothers appreciated the significance of breastfeeding initiation within 30 minutes to an hour after birth. Breastfeeding is vital to the health of newborns, and colostrum contains vital nutrients and antibodies that decrease the chances of infections and enhance the latter outcomes [20]. In line with the already available literature, the large percentage (39.8) of mothers who were either not aware (unaware) or highly opposed (16.9) to this practice indicates that there was a strong cultural and informational blockage [21]. The study results showed that 53.4% of mothers supported exclusive breastfeeding during the first six months, which is a rather high level of awareness in comparison with other practices yet still desirable. This practice variance to the WHO recommendations where most (66.1) were involved in

mixed feeding is attributed to the issues like the traditional modes of feeding, ignorance and possibly insufficient support mechanisms to mothers. These findings are also similar to the other study, which indicates that preference to exclusive breastfeeding was observed as 20.47% (95% CI: 18.8423.63)[22]. The study results revealed that the use of less common traditional methods like the application of mud or saliva, although less common (3.1% and 4.2, respectively), still exists, and subject's newborns to the risks of neonatal tetanus and sepsis. The same tendencies have been reported in the researches that revealed that over 50 percent of young mothers 196 (62.2%) were well informed about cord care, yet, the practice of cord care was very poor with only 21 percent of them reporting good practice of cord care[23]. Chi-square analysis outcomes in the study revealed the significance of demographic factors and numerous newborn care practices. This is in line with the studies that have indicated that there are strong associations between several factors and the outcome which include the place of residence, the level of education of the mother, number of antenatal care visits, family size, mode of delivery and the place of delivery [24]. Additionally, the educational background of mothers and the location of delivery had a strong impact on the kind of material to cut and tie the cord, as it is an indicator of the inequality of access to safe and standard delivery procedures in rural and urban areas. These results are in line with the past researches that mothers of higher education are more inclined to demonstrate positive health practices, have better hygiene practices and obtain correct healthcare information, which, altogether, lead to the effective cord management and the minimized chances of acquiring neonatal infections[25].

CONCLUSIONS

The mixed-method approach made the research have a holistic perspective of the role socio-cultural norms, and knowledge gaps play in shaping neonatal care practices. Cultural background and family factors dominate the decision making process thus resulting in poor care choices.

Authors Contribution

Conceptualization: AN, TS, SEK, MLK

Methodology: AN¹, TS, AQ, MN, AN², IG

Formal analysis: AN, TS, MLK

Writing review and editing: AN, TS

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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