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KNOWLEDGE AND PRACTICES OF INFANT AND TODDLERS WEANING AMONG MOTHERS ATTENDING PEDIATRICS DEPARTMENT OF A TERTIARY CARE HOSPITAL

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Abstract

Introduction: Weaning is a critical stage in an infant's development that involves introducing complementary foods alongside continued breastfeeding. Improper weaning practices can lead to malnutrition, infections, and growth issues in children.

Objective: To assess the knowledge and practices regarding weaning among mothers attending the Pediatrics Department of a tertiary care hospital in Pakistan.

Materials and Method: A descriptive cross-sectional study was conducted at Khyber Teaching Hospital, Peshawar, from January 2024 to June 2024. A total of 200 mothers of infants aged 6–24 months were selected using convenience sampling. Data were collected using a structured questionnaire and analyzed using SPSS version 25.

Results: While 68% of mothers knew the recommended age for weaning, 40% did not follow WHO guidelines. Only 60% introduced appropriate foods, and maternal education significantly influenced feeding practices.

Conclusion: There is a gap between maternal knowledge and practice regarding weaning. Educational interventions are needed to promote proper weaning practices.

Keywords: Weaning, Infant Feeding, Complementary Foods, Maternal Knowledge, Nutrition, Pakistan.

INTRODUCTION

Weaning is a sensitive stage of the life of an infant because it is a process of introducing semi-solid and solid foods to an infant together with breastfeeding. Weaning must be done at the most appropriate time and mode to promote proper growth, nutrition, and development in infancy and early childhood

years. Research worldwide has established that a low understanding of weaning regulations and practices is prevalent among mothers, especially in low- and middle-income nations, causing negative health consequences, such as malnutrition, diarrhea, and delays (1). The study was carried out in Pakistan, where cultural expectations and socioeconomic conditions have a massive impact on the resolutions of infant feeding. The knowledge and practices of mothers related to weaning are extremely important in interpreting dependable health interventions. According to the World Health Organization (WHO), it is advised that infants be breastfed exclusively during the first 6 months of life, followed by the introduction of complementary food audaciously breastfed for up to 2 years and beyond. Through these guidelines, some mothers begin initiating complementary feeding too early or late, and in most cases, with the wrong types of food as a result of misinformation or due to culture (2).

In one study done at Services Hospital Lahore, it was observed that a high percentage of the mothers did not know the right age to initiate weaning, and their way of doing it was mostly not in accordance with the recommended guidelines (2). These deficiencies in knowledge and performance can lead to poor diets, which pose many risks to the health of the kid. These same trends were found in India in a research study where mothers who were brought to a tertiary care hospital had moderate knowledge, but the practices related to weaning and complementary feeding were found to be inconsistent (3). These discrepancies were fuelled by a number of factors, which included maternal level of education, socio-economic status, and access to health care services. Uneducated mothers, those with economically poor backgrounds, had a higher tendency to initiate weaning at the wrong stage either sooner or later, and this contributed to the rise of nutrition deficiencies in their children (3).

In Uganda, there was a study about mothers attending healthcare services which showed that in spite of hearing about the right behaviors regarding weaning, there were still misconceptions being reported among the mothers like starting the use of solid food at an early age because they believed that breast milk is not enough (4). This indicates a very important disunity between knowledge and practice, which highlights the role of specific educational interventions. Familial pressure or cultural influence are also more likely to determine the timing of weaning as these factors tend to make mothers use the customary modes of feeding, which might not be very nutritionally effective (5). In the state of Maharashtra, it has been reported that inappropriate weaning was strongly linked with stunted growth and underweight conditions in infants, supporting the development of evidence-based awareness-creating initiatives (5). The findings could also be supported by research in Dhaka Medical College in Bangladesh, where most mothers were without knowledge regarding the type and frequency of complementary food, although there were favorable attitudes towards child nutrition (6).

The researchers also stated that institutional education in hospitals is an essential aspect throughout the educational programs to enhance maternal awareness and activities as far as infant feeding is related. Ghana studies have also underscored the point that despite having some knowledge, poor translation of knowledge into practice is still a point of concern and has implications on the overall nutrition of 6-59-month-old children (7). A systemic relationship was traced between maternal knowledge, feeding patterns, and children's nutritional status in Karnataka, India, where it was observed that more educated mothers managed to have healthier children that had better growth indicators (8). Nevertheless, many mothers trusted the opinion of family members or community standards over expert medical advice and differed in feeding (8). This has been reflected in a study on parental knowledge of feeding habits in Tamil Nadu, which has disclosed that a good number of mothers had no knowledge of the nutritive content of the food used in normal weaning foods (9).

A study in Nigeria revealed that despite a high level of awareness of exclusive breastfeeding, the shift to weaning was frequently not informed by appropriate knowledge, leading to inadequate dietary diversity in infants (10). The same case also happened in Uttarakhand, India, where mothers showed positive views on breastfeeding but poorly understood the progressive approach to weaning foods (11). There was a lot of belief that breast milk must be dropped in one go when the child starts feeding on hard food, and this can even cause extremely harmful health effects of solid foods on the child (11). Similarly, in an Indian study, postnatal mothers demonstrated low knowledge related to the

nutritional value of different weaning foods and, with high frequency, chose foods based on custom rather than dietary provision (12). In addition to this, the qualitative study carried out in Indonesia found that emotional stress, family pressure, and low confidence were the factors associated with bad weaning among the mothers, with most of them relying on the older women in the family to make decisions about feeding (13).

Mothers living in rural Bangladesh exhibited significant gaps in knowledge on exclusive breastfeeding and supplementary food use, and this was mostly attributed to poor access to medical services and nutritional messages (14). In Pakistan, a hospital-based study on tertiary care shows that mothers were aware of the benefits of breastfeeding, but the aspect of weaning was characterized by a lot of misinformation, where most mothers were feeding their children sweets or processed food at an early age (15). On the same note, in Malaysia, the difference between knowledge and action was quite notable as the mothers aware of the value of complementary feeding did not use it frequently or with the necessary food variety (16). Additionally, research in India concerning the level of knowledge of the lactational amenorrhea method (LAM) as a birth control strategy has shown that lots of mothers did not know that the early introduction of complementary food could affect natural contraceptive efficiency (17).

This means how closely the maternal knowledge regarding child nutrition and reproductive health can be interrelated. A study conducted in Kashmir revealed that despite mothers assigning importance to exclusive breastfeeding, most of them were ignorant regarding good weaning methods where they either resorted to pre-prepared baby food or to the leftovers of their family members (18). Finally, research by Nepal showed that even the mothers who had basic information on weaning were not aware of full information in terms of nutritional value and suitable food according to age, leading to anemia and poor growth in children (19). Finally, the importance of maternal knowledge when defining weaning practices in the context of infant health outcomes was emphasized as supported by the findings of different regional and international studies. There is still a high level of ignorance concerning proper methods of weaning despite the awareness created regarding the significance of breastfeeding in mothers.

Objective: To assess the knowledge and practices regarding weaning among mothers of infants and toddlers attending the Pediatrics Department of a tertiary care hospital in Pakistan from January to June 2024.

MATERIALS AND METHODS

Design: Descriptive cross-sectional study.

Study setting: The study was carried out at the Pediatrics Department of Khyber Teaching Hospital, Peshawar, a tertiary care facility in Pakistan.

Duration: The study was conducted over a period of six months, from January 2024 to June 2024.

Inclusion Criteria: Mothers between 18 years and 45 years old with children aged 6 months to 24 months who were participants of the Pediatrics Department during the research process were incorporated. The subjects had to sign the informed consent, and they had to display the willingness to respond to the structured questionnaire regarding the weaning knowledge and practices.

Exclusion Criteria: Mothers who had infants with congenital anomalies, chronic illnesses, or feeding disorders were not included. Moreover, mothers who work in the field of healthcare, as well as those who could not be ready to take part in the study, were also not allowed.

Methods

The data was collected by using a pre-tested structured questionnaire involving the mothers who visit the Pediatrics Department of Khyber Teaching Hospital, Peshawar. To understand the questionnaire, the questionnaire was prepared both in Urdu and English and contained demographic data, weaning knowledge, and the actual feeding regimen. Participants were selected using non-probability convenience sampling. Data collection was carried out by trained female data collectors to ensure privacy and cultural appropriateness. Each participant was informed about the purpose of the study,

and verbal and written consent was obtained prior to participation. The questionnaire included both closed and open-ended questions. Knowledge was assessed through a scoring system based on correct responses aligned with WHO recommendations. Practices were evaluated by analyzing the type, timing, and frequency of complementary foods introduced. Data were entered and analyzed using SPSS version 25. Descriptive statistics such as frequencies and percentages were calculated and presented in tabular and graphical formats.

RESULTS

A total of 200 mothers participated in the study conducted at the Pediatrics Department of Khyber Teaching Hospital, Peshawar. The demographic analysis revealed that the majority of the mothers (40%) were aged between 26 and 30 years, while 30% were aged 21–25 years, and only 10% were above 35 years. Most of the respondents (65%) were housewives, and 35% were employed. Regarding education, 45% had completed secondary education, 30% had primary education, and 25% had no formal education. The knowledge of mothers about weaning was assessed based on key indicators, such as the ideal age for introducing complementary foods, understanding of weaning types, and awareness of the importance of continued breastfeeding. As shown in **Table 1**, 68% of the mothers knew that weaning should start at 6 months, as recommended by WHO, while 20% believed it should start before 6 months, and 12% after 6 months.

Table 1: Knowledge about Ideal Age of Starting Weaning

Response	Frequency	Percentage
Before 6 months	40	20%
At 6 months (Recommended age)	136	68%
After 6 months	24	12%
Total	**200**	**100%**

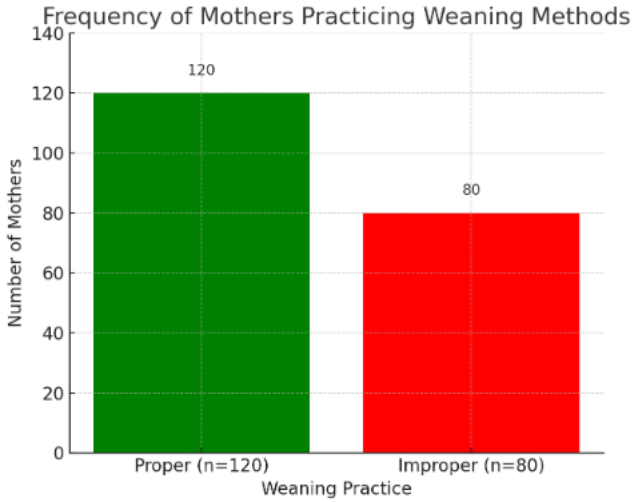
Regarding the types of first foods introduced, 50% of mothers reported using mashed fruits and vegetables, 25% used cereals like rice or wheat porridge, 15% gave packaged baby food, and 10% introduced family food in mashed form. Only 60% of mothers were aware that weaning foods should be rich in nutrients, soft in texture, and gradually thickened over time. Weaning practices among mothers varied significantly. As shown in **Table 2**, 58% of mothers reported giving complementary foods two to three times daily, while 30% gave them once per day, and only 12% gave them more than three times. About 66% of mothers continued breastfeeding along with weaning, while the rest discontinued breastfeeding within the first few months of starting complementary feeding.

Table 2: Frequency of Weaning Meals per Day

Frequency of Meals	Frequency	Percentage
Once daily	60	30%
Two to three times daily	116	58%
More than three times daily	24	12%
Total	**200**	**100%**

Figure 1 below highlights the frequency of mothers practicing proper weaning methods based on WHO recommendations versus those not following guidelines. Out of 200 mothers, 120 (60%) followed proper methods, whereas 80 (40%) did not.

Figure 1: Weaning Practices According to WHO Guidelines



Further analysis showed that maternal education had a significant influence on proper weaning practices. As shown in **Table 3**, among mothers with secondary or higher education, 80% practiced appropriate weaning, compared to only 30% among those with no formal education.

Table 3: Relationship between Maternal Education and Weaning Practices

Education Level	Proper Practice	Improper Practice	Total
No formal education	15	35	50
Primary	30	30	60
Secondary or above	75	15	90
Total	**120**	**80**	**200**

These results indicate that although a majority of mothers were aware of the ideal weaning age, gaps still exist in the quality and frequency of complementary feeding. Education level was found to be a key determinant of proper practices. The findings suggest a need for targeted educational interventions in pediatric healthcare settings to promote better weaning practices and ensure improved child health outcomes.

DISCUSSION

The present study aimed to assess the knowledge and practices of weaning among mothers attending the Pediatrics Department of a tertiary care hospital in Pakistan. These results demonstrate conflicting knowledge and practice of prescribed weaning practices. The outcomes of this research reflect the results of earlier research completed in the region and at the international level. The fact that a huge percentage of mothers in this research were aware that weaning was to start at the age of six months was in keeping with the WHO recommendations. This finding can be compared with the one by Anto et al., who found out that the majority of mothers were aware of the age at which the introduction of complementary feeding should be, but they also largely did not apply it in practice (1).

On the same note, Faiz et al., in their study in Services Hospital Lahore, noted that although 70 percent of mothers possessed elementary knowledge of weaning, a significant number began either before or much later than the prescribed time of complementary feeding (2). This implies that even though health education might have achieved some levels of penetration towards the target population, there exists some point of failure in transferring knowledge into practice. The gap between knowledge and practice could be seen in the nature of weaning foods introduced by mothers. Some chose more healthy products such as mashed vegetables and fruit. Others chose packaged baby food or family food that is low in nutritional value. Jabeen et al. also indicated that despite the clear understanding

of the necessity of feeding nutrient-rich weaning foods, the economic and cultural factors had frequently dictated the real decisions of many mothers (3). Peer pressure and cultural norms, as well as the absence of consistent health advice, were identified as the key obstacles in harmonizing practices with international recommendations (4).

Dalbhanjan and Kadam pointed out the negative effects of late or improper weaning on infant growth, especially in low-resource conditions. They pointed out that poor feeding habits during this crucial time of their development may result in being underweight and stunted growth (5). This idea aligns with our research, with the vast majority of mothers following either a delay in weaning or a lack of frequency of feeding, both of which may result in the development of nutritional deficiencies. Hospital-based studies such as those conducted in Dhaka and Ghana reinforce the idea that maternal education plays a crucial role in weaning practices. Ara et al. noted that mothers with formal education were more likely to follow the recommended guidelines and adapt their feeding techniques according to their child's developmental needs (6).

Likewise, Forh et al. observed a strong correlation between maternal nutritional knowledge and child health indicators in Ghana (7). This finding aligns with our study, where mothers with secondary education or higher were more likely to practice proper weaning methods compared to those without any formal education. Pinto et al. also found that educational interventions targeted at mothers can significantly improve child nutrition outcomes, particularly in rural and underserved communities (8). However, awareness campaigns must be designed to local cultural beliefs and economic realities to be effective. In this regard, Ganesan et al. highlighted the influence of traditional beliefs and family pressures in India that often override medical advice when it comes to infant feeding practices (9). These cultural factors were also observed in our study population, where older female relatives played a significant role in shaping mothers' decisions regarding weaning.

Mohammed and Aliyu reported that although awareness of breastfeeding was high in Nigeria, the knowledge related to complementary feeding remained suboptimal (10). Similarly, Jelly et al. pointed out that while breastfeeding was culturally accepted and widely practiced, the timing and quality of weaning practices needed significant improvement (11). These findings are comparable with the present study, where continued breastfeeding alongside weaning was observed among most mothers, but the transition to complementary feeding often lacked proper planning and nutrition awareness. Bheeman et al. and Anggerainy et al. stressed that practical demonstrations and contact with counseling over verbal presentation and instructions are more appropriate for producing an alternative behavior of weaning (12, 13). This is one of the most important observations to healthcare providers because it promotes the use of interactive, visual, and culturally related methods of communication in educating mothers.

At the rural settlements of Coxs Bazar in Bangladesh, Chhetri discovered that there was no access to quality information on health, which led to poor weaning behaviors, due to which child morbidity was high (14). Likewise, in a triplicate care hospital in Pakistan, it was identified by Murtaza et al. that although knowledge of breastfeeding was at a satisfying level, there was inadequate knowledge of the process of transition to weaning as well as its nutritional importance (15). The given observation highly confirms the idea that hospital-based counseling services need to cover comprehensive complementary feeding instructions within their scope. Research in Malaysia and India also indicated that mothers may possess some general knowledge regarding complementary feeding, but there is a regular discrepancy in the practice of complementary feeding because of socioeconomic constraints and misinformation (16, 17).

These gaps are compounded by the fact that there is no consistent follow-up and practical training. In Kashmir, Nabi et al. noted that misinformation and culture-related myths had a potent effect on early or late weaning habits, which has an unsatisfactory effect on the nutritive plan of infants (18). To conclude, Pokharel and Adhikari in Nepal studied the association between maternal nutrition knowledge and childhood anemia and found that adverse weaning habits were also a major contributor to micronutrient deficiency and child illness (19). This is a reflection of the significance of informing the mothers not only when to wean but also on what type of food to introduce and how frequently.

CONCLUSION

This paper draws attention to the existing knowledge-practice gaps in weaning in mothers who visit the Department of Pediatrics of a tertiary care hospital in Pakistan. Many of the mothers did not have in-depth information concerning the sort of complementary food, frequency of feeds, and commencement of breastfeeding together with weaning, despite most of them being aware of the right time to initiate weaning. The level of education, socioeconomic variables, and cultural issues were vital in assigning these practices. Mothers who were well-educated preferred proper methods of weaning compared to those mothers who were poorly educated and usually turned back to the traditionally accepted or inappropriate methods of weaning. Its findings justify a need to design specific culturally-based health education programs about weaning and infant nutrition. To achieve positive feeding patterns, pediatric medical workers are expected to implement feasible, readily available, and family-oriented counseling. To promote healthier early childhood development in Pakistan, maternal knowledge and practices towards weaning improvement are crucial to promoting child growth, improving the level of malnutrition, and enhancing healthier early childhood development in Pakistan.

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