Original Article

Complementary Feeding Practices and Nutritional Status of 06-24 Months Old Child

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ABSTRACT

Objective: In order to have a baseline knowledge of the prevalence and effects of CFPs on the nutritional status of the target group, it was necessary to measure complementary feeding indicators among children aged 6-24 months in the study population.

Study Design: A Cross-Sectional study.

Place and Duration of Study: This study was conducted at the Department of Paeds, HMC, Peshawar from Jan 2023 to Jan 2024.

Methods: The study was a descriptive cross-sectional one on 150 children at a probation age of 6-24 months. Questionnaires are structured, instruction includes feeding practices and frequency, choice of food inclusive of snacks. Necessary anthropometric indices were collected to determine the nutritional condition of the students. The null hypothesis was addressed using descriptive statistics which incorporated inferential which required use of mean standard deviation and P values.

Results: The age of the children was calculated mean, SD, and Pf, for this purpose: The mean age of the 150 children was 14.3 ± 4.5 months. A very high proportion of the children suffered from malnutrition, mostly underweight and stunting, 30% and 25% respectively. Unhealthy feeding practices, late complementary feeding and low meal frequency were established in 40% of the participants. The p-value analysis ($p < 0.05$) indicated that there is a relationship between feeding practices and nutritional status. Thus, controlling for other relevant determinants, children with good practices as recommended by the CF had better growth score compared to the poor practices.

Conclusion: In this study, the importance of proper complementary feeding needed in enhancing the nutritional status of children is emphasized. Initiation of the multiple and Density selected Food early enough and frequent times enhances children health and development. These results indicate that further public health interventions should target the improvement of optimal CF practices by caregivers.

Key Words: Complementary feeding, nutrition, 6-24 month, malnutrition

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INTRODUCTION

Complementary feeding (CF) therefore refers to the period in an child's early feeding transition from breast milk or formula feeding to other forms of food mixes at about 6 months of age. This is a developmentally sensitive period for a child when he or she is between 6 and 24 months old.

It is at this stage that children begin to drop breastfeeding and graduate to other complementary foods that will supply their bodies with the nutrients they need for growth and development of sound immune health. The WHO encourages the provision of diverse and more densified complementary foods while continuing to breast feed the child beyond the age of two years, since this minimizes both malnutrition and diseases[1-2].

Complementary feeding period is very critical in the prevention of both under nutrition and over nutrition. There is an epidemiological problem of under nutrition in children within the age of 6-24 months especially in the developing countries where there is culture related neglected complementary feeding that leads to malnutrition, stunted growth and high mortality rates. Nutritional deficiency during this stage contributes to about 45% of the children death in the under five years across the world[2]. Stunting and wasting in children are conditions associated with inadequate quantity and quality of nutrients consumed, in addition to frequent illness[3].

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The process of complementing the diet of the child who is between 6 and 8 months of age is characterized by the poor compliance with the principle of dietary variety. According to WHO, children should take at least 4 groups of foods daily which includes grains, fruits, vegetables, proteins and dairy products. Nevertheless, in most LMICs, which are home to over 60% of the worlds' population, knowledge about proper feeding remains limited, the availability of adequate micronutrient dense foods is limited, and several vulnerable socio-economic conditions exist to limit dietary diversity. Investigations have shown that food diversification is limited among children below the ages of five years, and this had a positive correlation with micronutrient deficiencies of iron, zinc, vitamin A and calcium which are important for immune boosting, cognitive development and growth[4].

The practices of breastfeeding during complementary feeding though rich in quantity but low quality do impact on the nutritional status of children. According to the WHO, breast feeding should continue all through this period though research has shown that early cessation of breast feeding spells poor health for the child. For example, one cross-sectional study demonstrated that children who were weaned before the age of one year had received less breastfeeding, a sufficient enough nutrition was considerably higher calories compared to children still breastfed beyond one year of age[5].

The last one is also realized by the so called complementary feeding, which refers to the type, frequency and timing of food given to the child apart from the breast-feeding, including early complementary feeding < 6 mo and late complementary feeding ≥ 8 mo. Early introduction of solids leads to gastrointestinal infections, on the other hand, late introductions leads to poor nutrient intake and hence poor growth outcomes[6]. Also, the timing is decisive since kids in this age group need to eat more often than older people because of the small stomach size but the high energy demand.

The objective of the study is to assess the complementary feeding amongst children within the age of 6-24 months and effective effects on the children's nutrition. Thus, having established the specific research goals that consist in determining common feeding practices and their connection to nutritionally relevant outcomes, this study aims at offering the findings which can be useful in terms of public health intervention that can contribute to child health and nutritional standing improvement.

METHODS

A descriptive cross sectional research was carried out on 150 children aged between 6 months and 2 years. In the study, simple random sampling was used to select the sample from the health facilities in the study region. A structured questionnaire was used to assess information on complementary feeding; the type of complementary food given, the frequency at which it was administered and the age at which complementary feeding was initiated. To determine their nutritional status, the children's weight and their height were measured using an ANTHRO 2000 instrument. We sought and received ethical clearance to undertake the study and gathered informed consent from all the caregivers.

Data Collection: Information on complementary feeding was obtained from mothers or caregivers through a pre-tested, structured questionnaires. Weight and height were used in calculating the nutritional status of the children such as weight for age, height for age and weight for height.

Statistical Analysis: The data was analyzed by using the Statistical Package for Social Science (SPSS 24.0). Feeding practices and nutritional status was described by using descriptive statistics. The relationship between feeding practices and nutritional status was compared using cross-tabulations and CHI square test at a significance level of 0.05.

RESULTS

For 150 children selected for the research the mean age was 14.3 ± 4.5 months old. In relation to dietary diversity among the children, 40% of the total participants were recorded to have a poor dietary that less than four food groups were consumed per day. The level of acute and chronic malnutrition was high; underweight children constituted 30% while stunted children were 25%. In addition, 20% of children tested for wasting. The use of statistical analysis with children started showing that wrong practices of complementary feeding equal malnutrition. For example, children weaning at a later age than at 8 months of age had a significantly higher prevalence of stunting ($p < 0.05$). Also, those who were less fed meaning they got less than three meals per day were linked to being under weight ($p < 0.05$). The analysis also indicated that the children who practiced good complementary feeding recommendation experienced better growth profiles than those who had poor practices. Exclusive breastfeeding up to six months together with appropriate complementary feeding supported superior weight for height and height for age status ($p < 0.05$).

Table No.1: Sample Characteristics

Variable	Value
Mean Age (months)	14.3
Gender (Male)	85.0
Gender (Female)	65.0

Table No.2: Nutritional Status

Nutritional Status	Prevalence (%)
Underweight (%)	30
Stunting (%)	25
Wasting (%)	20

Table No.3: Complementary Feeding Practices

Feeding Practice	Prevalence (%)
Inappropriate CF Practices (%)	40
Adequate CF Practices (%)	60

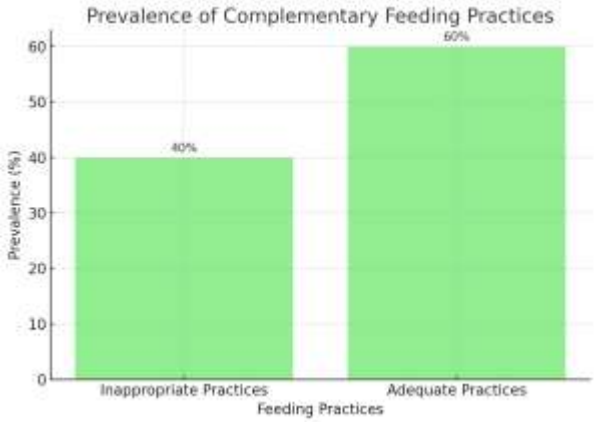

Figure No.1: Prevalence of complementary feeding practice with percentage.

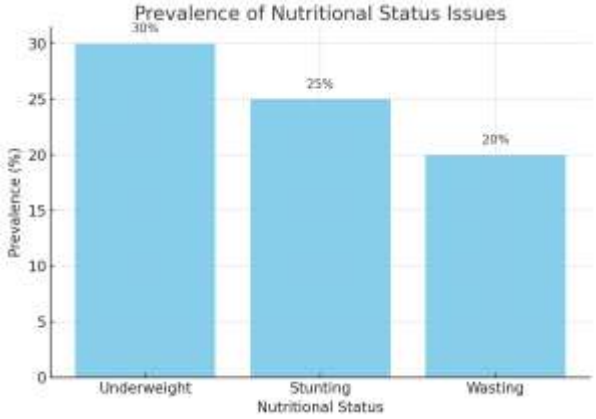

Figure No.2: Prevalence of Nutritional Status issues with percentage.

DISCUSSION

The result of the present study is consistent with the earlier study done on complementary feeding practices and effect on children aged 6-24 months nutritional situation. The lack of appropriate solid, semi-solid and soft foods after the introduction of first foods often referred to as complementary feeding has been established to be consistently associated with malnutrition, especially in LMICs. The findings of this study indicate that 40% of the children in this study were on inappropriate distribution of complementary feedings, a factor observed to have been highlighted in other studies in similar settings as well. For example, one cross-sectional study conducted in Ethiopia concluded that the diversity of tinned foods in children aged 6-23 months was small 57%, which pointed out that most children did not manage minimal food groups per day. Underweight, stunting and wasting were 30%, 25% and 20% respectively in this study and these are evident of challenges observed in previous studies. Under-nutrition is still a challenge locally, and internationally with the affected group being under five years children. Among > 6 to < 24 months of age, the rate of underweight and stunting were 34.7% and 29.1% respectively and the other results were almost similar[8]. The present study leads us to conclude that poor complementary feeding practices contribute a lot to Child growth outcomes as it has been discovered in many studies conducted in other regions. The consistently low intake of nutrients and improper feeding rates have been positively associated with malnutrition among children especially in sub-Saharan Africa and South Asia[9]. The WHO suggests that complementary foods should be ushered in at the time when the infant is half a year old in order to address emerging nutrient requirements[10]. However, the present study indicated that a large number of children were administered complementary foods beyond the recommended age. There is evidence that late initiation of CF is associated with reduced intakes of energy and several micronutrients, including iron, zinc, and vitamin A all of which are important for brain and immune development[11]. According to a study done in Nigerian 25%feeds their children on complementary feeding after eight months increasing the incidence of stunta Nd wasting among the targeted group[12]. Furthermore, the fact that prolonged breastfeeding was associated with improved nutritional status; findings noted in this study are well supported by literature review. For example, a study done in Kenya came to a conclusion in which the children who continued to be breastfeed at one year of age with adequate complementary foods had a lesser stunted growth status as compared to the early weaned child[13]. Breast milk contains needed nutrients and antibodies especially in areas with poor quality with foods and water[14]. According to the food frequency, the WHO guidelines suggest that, children aged between 6-24 months should receive complementary foods of number 3-4 times a day alongside breast milk[15]. According to the present study it was found that children who were fed less frequently had low weight and height indices. The same gender differences of malnutrition were documented in Bangladesh, where children receiving less number of meals per day were more likely to be malnourished[16]. Lack of adequate feeding frequency can be blamed on knowledge deficit amongst the caregivers, food insecurity within a given household and culture[17]. In addition, this research pointed out the importance of public health knowledge that care givers should have about Complementary feeding. It has been evidenced that educational programs do help enhance feeding practices and child health status. Randomized control trials conducted in rural Vietnam indicate that community-based nutrition education also improved the frequency of feeding and dietary diversity and thus enhanced growth

performance among children[18]. An attached table showed about this in table 2. Finally, the outcome of this research supports the following recommendations: Early suitable complementary foods should be started; dietary diversity is crucial for the nutritional needs of the children 6-24 months; and continued breastfeeding should be practiced for the improved status of young children. An efficient population health interventions that include caregivers and local community nutrition initiatives are paramount important in addressing the problem of malnutrition especially in this age range.

CONCLUSION

it is obvious that properly observing complementary feeding is one of the most effective means of combating malnutrition in children aged 6-24 months. A further benefit associated with early commencement of different and nutrient foods and breast feeding is that it helps in growth and development of the child.

Future Directions: Further research should be directed on verso-longitudinal surveys with intent of establishing the comprehensive effect of complimentary feeding practices. However, there is insufficient evidence that evaluates the effectiveness of interventions designed to raise the level of knowledge of caregivers in the best practice for patients with CF that should be carried out in different settings.

Author's Contribution:

Concept & Design of Study:	Jahanzeb Khan Afridi
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Final Approval of version:	By all above authors

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