Feeding Practices among Mothers of Preschoolers in a Selected Community of Pokhara, Nepal

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ABSTRACT

Introduction: Feeding practices during the preschool years play a vital role in establishing lifelong dietary habits and health outcomes. Mothers, as primary caregivers, play a central role in determining the quality of children's diets. The study aimed to assess the feeding practices among mothers of preschoolers in a selected community of Pokhara and examine their association with selected demographic variables.

Methods: A descriptive cross-sectional study was conducted among 111 mothers of children aged 3–6 years residing in Ward No. 17 of Pokhara Metropolitan City. Participants were selected using purposive sampling. Data were collected through face-to-face interviews using a structured questionnaire, including socio-demographic details and the Parent Mealtime Action Scale-Revised (PMAS-R). Descriptive statistics, t-tests, and ANOVA were applied using SPSS version 22.

Results: Positive persuasion (median=16, IQR=14-17) was the most commonly adopted feeding practice, while coercive methods like insistence on eating were least used (median=7, IQR=5-9). Household income was significantly associated with feeding practice scores (p =0.039), indicating better practices among higher-income groups whereas no significant associations were found with maternal age, education or occupation.

Conclusion: Mothers commonly used positive persuasion and provided fruits and vegetables, while reward-based feeding practices remained prevalent. Economic status emerged as an important determinant of feeding behaviors. Community-based nutrition education programs targeting low-income families are recommended.

Keywords: Feeding practice, Mothers, Preschoolers

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INTRODUCTION

Early childhood represents a critical stage for developing dietary habits that influence growth, health, and future disease risk. Globally, malnutrition and childhood obesity coexist in 2022, 149 million children under five were stunted, 45 million wasted, and 37 million overweight.[1] Nepal faces similar challenges; the 2022 National Demographic and Health Survey (NDHS) reported that 25% of under-five children were stunted, 19% underweight, and 1% overweight, reflecting a double burden

of undernutrition and over nutrition.[2] The home food environment is shaped by parents or caregivers who determine the availability of certain foods, encourage children to eat specific items, establish food-related rules, use positive reinforcement, and model healthy dietary behaviors.[3] Mothers play a crucial role in shaping their children's understanding of nutrition, and currently, many parents possess limited knowledge and information about healthy eating.[4]

Engaging in strategies such as offering a variety of foods, modeling positive eating behavior, and encouraging exploration of different tastes can significantly improve a child's acceptance of healthy foods "Since a child's food preferences influence overall diet quality, supporting positive food experiences early in life is crucial.[5] By fostering a love for nutritious and delicious foods, parents play a crucial role in guiding their children towards healthier eating habits that can last a lifetime.[6] A study suggests that food preferences develop from genetics and learned experiences.[7,8] Research identifies several critical factors that influence a mother's decisions regarding feeding practices. The most significant of these are a mother's education and dietary knowledge, socio-economic conditions, socio-cultural and physiological factors, family pressures to adhere to traditional practices, and insufficient social support. In developing countries like Nepal, poverty stands out as a key factor that impacts all underlying determinants. A low economic background severely restricts access to quality education and healthcare, as well as a variety of affordable and nutritious food options. This combination inevitably contributes to poor feeding practices and, as a result, child malnutrition. Given Nepal's rich cultural diversity, practices can vary significantly based on geographical regions, ethnic groups, and cultural taboos.[9]

Despite the acknowledged significance of early nutrition, contemporary research examining the feeding practices of mothers with preschoolers remains limited. Previous studies have largely concentrated on breastfeeding trends or have not adequately accounted for the varied feeding practices shaped by cultural, socio-economic, and regional influences. Furthermore, recent changes in dietary guidelines and a heightened awareness of nutrition may have transformed maternal feeding practices since the last thorough investigations were conducted. Therefore, this study aims to assess the feeding practices of mothers toward their preschool-aged children and to examine the association between these practices and selected variables.

METHODS

A descriptive cross-sectional study was conducted among mothers of preschoolers in a Ward No.17, Pokhara. The sample size was determined by using Cochran's formula, with 95% CI, 7% of degree of precision and the prevalence of 83 %.[10] Six toles were selected from 43 toles of Ward No. 17. Total 111 mothers of children aged 3–6 years were recruited through purposive sampling. In cases mothers had more than one eligible child, the younger child was considered.

Data were collected using a structured interview schedule. The questionnaire consisted of two sections. In first section included demographic information and second section comprised questionnaire related to feeding practices which were measured using the Parent Mealtime Action Scale-Revised (PMAS-R), a 31-items tool covering nine domains: snack limit, positive persuasion, fruit and vegetable availability, use of rewards, insistence on eating, snack modeling, fat reduction, many food choices, and child-selected meals. Items were rated on a five-point Likert scale. The PMAS-R has demonstrated acceptable reliability (Cronbach's = 0.50–0.86) and construct validity.[11] The tool was translated into Nepali and back-translated to English for accuracy. A pretest was conducted with

10% (11) of the sample in the Ward No. 11. Mothers were interviewed face-to-face and filled out the questionnaire, indicating how often they engage in particular feeding practices. Each question was scored, and scores were aggregated for each dimension using frequency and percentage.

Ethical approval was granted by the Institutional Review Committee of TU, Institute of Medicine (Ref: 402/081/082). Data were collected between January 27 and February 7, 2025. Informed consent was obtained from participants. Confidentiality and the right to withdraw at any stage were assured. Data were coded and analyzed using SPSS version 22. Descriptive statistics (mean, SD, frequency, percentage, median and IQR) were computed. Independent t-tests and ANOVA were used to compare between feeding practices and socio-demographic variables.

RESULTS

Among 111 mothers, 49 (44.1%) of mothers were in the age group of 30–34 years. Most of the mothers were Hindu (96.4%) and literate (99.1%), with 56.4% having completed secondary education. Slightly more lived in nuclear (54.1%) than joint families (45.9%). Nearly half percent (48.6%) had two children, and 50.4% had a 5-year-old preschooler. Monthly family income varied, with 40.9% reporting earnings of NPR 30000-60000 (Table 1).

Table 1: Background Information of the Mothers (n= 111)

Variables	Categories	Number	Percent
Age (years)	20-24	8	7.2
	25-29	34	30.6
	30-34	49	44.1
	35-39	16	14.4
	40 and above	4	3.6
Mean±SD 30.81± 4.57			
Religion of the mother	Hindu	107	96.4
	Buddhist	3	2.7
	Christian	1	0.9
Education Status	Illiterate	1	0.9
	Basic	5	4.5
	Secondary	62	56.4
	Bachelor	29	26.3
	Master and above	14	12.8
Current Occupational Status	Home maker	39	35.1
	Service	38	34.2
	Business	28	25.2
	Student	6	4.5
Type of family	Nuclear	60	54.1
	Joint	51	45.9
No. of children	Two	54	48.6
	One	53	47.7
	three or more	4	3.6
Age of Preschooler	5 years	56	50.4
	3 years	32	28.8
	4 years	23	20.8
Monthly Family Income (NRs)	<30000	16	14.1
	30000-60000	45	40.9
	60000-90000	26	23.6
	Above 90000	24	21.6

Majority of the mothers (68.4%) got information about feeding practices from family and friends, followed by child diet recipes (35.1%) and health personnel (33.3%). Advertisements

and mass media were the least common source (20.7%) (Table 2).

Table 2: Source of Information About Feeding Practices (n= 111)

Source of Information*	Number	Percent
Family and friends' suggestions	76	68.4
Child diet recipe	39	35.1
Health personnel	37	33.3
Advertisement/ mass media	23	20.7

** Multiple response*

Many parents used reward-based strategies, with 41.4% often and 22.5% always offering toys or activities to encourage eating, while 27% avoided using dessert rewards. Moderate support for food autonomy was observed, as 55% sometimes let children eat what they wanted, though only 1.8% always allowed food substitution. In terms of child-selected meals, 41.5% sometimes ate the same food as their child, and 33.3% always ensured all food items were placed on the child's plate. Health-conscious behaviors were also notable, with 40.5% always modifying children's meals and 36.9% modifying their own to reduce fat content (Table 3).

Table 3: Mothers' Responses on Feeding Practices – Food Rewards, Choices, and Modeling (n= 111)

Statements	Never No. (%)	Rarely No.(%)	Sometimes No. (%)	Often No. (%)	Always No. (%)
Use of Rewards					
Made food as a game	8 (7.2)	2 (1.8)	40 (36.0)	39 (35.1)	22 (19.8)
Offered the child a toy/ favorite activity as a reward for eating.	5 (4.5)	1 (0.9)	34 (30.6)	46 (41.4)	25 (22.5)
Gave the child a favorite food as a reward for good behavior.	9 (8.1)	7 (6.3)	31 (27.9)	28 (25.2)	36 (32.4)
Offered the child a special dessert as a reward for eating.	30 (27.0)	21 (18.9)	45 (40.5)	8 (7.2)	7 (6.3)
Many Foods Choice					
Let the child eat whatever he wanted.	10 (9.0)	4 (3.6)	61 (55.0)	23 (20.7)	13(11.7)
Let the child flavor the food however he wanted.	7 (6.3)	9 (8.1)	50 (45.0)	28 (25.2)	17(15.3)
Let the child substitute a food for one he liked.	31 (27.9)	17 (15.3)	52 (43.2)	9 (8.1)	2 (1.8)
Let the child choose which foods to eat, but only from those offered.	15 (13.5)	9 (8.1)	54 (48.6)	26 (23.4)	7 (6.3)

Statements	Never No. (%)	Rarely No.(%)	Sometimes No. (%)	Often No. (%)	Always No. (%)
Child selected meals					
Ate the same food that offered to the child.	9 (8.1)	4 (3.6)	46 (41.5)	22 (19.8)	30 (27.0)
Sat with the child but did not eat.	20 (18.0)	9 (8.1)	42 (37.8)	27 (24.3)	13(11.7)
Prepared a special meal for the child, different than the family meal.	18 (16.2)	2 (1.8)	41 (36.9)	35 (31.5)	15 (13.5)
Placed some of each food on the child's plate.	4 (3.6)	3 (2.7)	25 (22.5)	42 (37.8)	37(33.3)
Fat Reduction					
Stopped the child from eating too much.	27 (24.3)	16 (14.4)	47 (42.3)	12 (10.8)	9 (8.1)
Made changes to the child's food to lower fat.	5 (4.5)	3 (2.7)	21 (18.9)	37 (33.3)	45 (40.5)
Made changes to your own diet to lower fat.	5 (4.5)	2 (1.8)	18 (16.2)	45 (40.5)	41 (36.9)

Table 4 illustrates positive persuasion was commonly used, with 58.6% of parents always promoting health benefits of food and over 70% often or always encouraging tasting. Daily fruit and vegetable availability was high, as 81.1% always ate vegetables and 44.1% always gave fruit to their children. However, less healthy snack modeling was evident, with over 50% sometimes consuming sweets and nearly 47% drinking soda. Most parents set snack limits, with 65.7% often or always restricting sweets, while coercive feeding was rare, as only 2.7% always insisted children eat when not hungry.

Table 4: Mothers' Responses on Feeding Practices – Persuasion, Nutrition, and Control (n=111)

Statements	Never No. (%)	Rarely No. (%)	Sometimes No. (%)	Often No. (%)	Always No. (%)
Positive Persuasion					
Told the child how much you liked the food.	5 (4.5)	6 (5.4)	23 (20.7)	49(44.1)	28 (25.2)
Told the child how good the food will taste if s/he tries it.	4 (3.6)	3 (2.7)	26 (23.4)	49 (44.1)	29 (26.1)
Told the child that his/her friends or siblings like the food.	8 (7.2)	1 (0.9)	40 (36)	39(35.1)	23 (20.7)
Told the child that a food will make him/her healthy/smart/ strong.	-	-	10 (9)	36(32.4)	65 (58.6)

Statements	Never No. (%)	Rarely No. (%)	Sometimes No. (%)	Often No. (%)	Always No. (%)
Daily Fruits and Vegetables Availability					
Gave the child fruit each day.	-	-	28 (25.2)	34(30.6)	49 (44.1)
Ate fruit each day.	1 (0.9)	-	45 (40.5)	23(20.7)	42 (37.8)
Ate vegetables each day.	-	-	13 (11.7)	8 (7.2)	90 (81.1)
Snack Modelling					
Drank soda each day.	37(33.3)	18(16.2)	52 (46.8)	2 (1.8)	2 (1.8)
Ate candy/sweets each day.	28(25.2)	23(20.7)	56 (50.5)	4 (3.6)	-
Ate salty snacks each day	18(16.2)	10 (9)	64 (57.7)	8 (7.2)	11 (9.9)
Snack Limit					
Set limits for how many sweets the child could have each day.	4 (3.6)	5 (4.5)	29 (26.1)	42(37.8)	31 (27.9)
Set limits for how many sodas the child could have each day.	13(11.7)	8 (7.2)	19 (17.1)	35(31.5)	36 (32.4)
Set limits for how many snacks the child can have each day.	12(10.8)	7 (6.3)	33 (29.7)	38(34.2)	21 (18.9)
Insistence on Eating					
Insisted the child eat even if he said, "I'm not hungry."	36(32.4)	20 (18)	41 (36.9)	11 (9.9)	3 (2.7)
Insisted the child eat when he was sleepy, not feeling well.	38(34.2)	22(19.8)	32 (28.8)	16(14.4)	3 (2.7)
Insisted the child eat when he was emotionally upset.	30 (27.0)	19(17.1)	42 (37.8)	14(12.6)	(5.4)

Among the nine PMAS-R domains, positive persuasion was the most frequently practiced strategy with higher median (IQR):16 (14-17), followed by child-selected meals median: 14(13-15). The lowest median score was observed for insistence on eating and snack modeling:7(5-9), indicating limited reliance on coercive strategies (Table 5).

Table 5: Median Scores and Interquartile Range (IQR) of Dimensions of Feeding Practices (n= 111)

Dimensions	Median	IQR	Min.	Max.
Positive persuasion	16	14-17	6.0	20.0
Child selected meal	14	13-15	8.0	19.0
Fruit and vegetable availability	13	11-15	9.0	15.0
Many food choices	12	10-14	6.0	18.0
Snack limit	12	9-13	3.0	15.0
Use of rewards	11	10-13	5.0	15.0
Fat reduction	11	9-12	4.0	15.0
Snack modeling	7	5-9	3.0	13.0
Insistence on eating	7	5-9	3.0	15.0

IQR - Inter Quartile Range

Table 6 illustrates that household income was significantly associated with overall feeding practice scores (F=2.888, p=0.039), with higher-income families reporting more positive practices. No significant associations were found with maternal age, education, occupation, family type, or number of children.

Table 6: Mean Comparison between Feeding Practice and Background Variables among the Mothers (n=111)

Variable	No.	Mean score	SE	CI	Statistic value	*p*- value
Age (years)						
≤ 31	62	104.00	1.102	(101.84, 106.16)	-0.024#	0.981
>31	49	104.04	1.350	(101.39, 106.69)		
Religion						
Hindu	107	104.08	0.852	(102.41, 105.75)	0.399#	0.083
Others	04	102.25	7.227	(88.09, 116.41)		
Education Level						
Up to secondary level	67	103.06	1.156	(100.80, 105.33)	-1.478#	0.142
Bachelor and above	43	105.53	1.207	(103.17, 107.89)		
Occupation						
Employed	67	104.21	0.983	(101.31, 106.15)	0.275#	0.784
Unemployed	44	103.73	1.559	(100.58, 106.88)		
Types of Family						
Nuclear	60	103.08	1.152	(100.82, 105.34)	-1.191#	0.660
Joint	51	105.12	1.262	(102.65, 107.59)		
No. of Children						
One	53	104.02	1.155	101.76, 106.28	0.001#	0.933
More than one	58	104.02	1.254	(101.56, 106.48)		
Age of Preschooler						
3 years	32	102.47	1.656	(99.09, 105.85)	0.927	0.399
4 years	23	105.78	1.746	(102.16, 109.40)		
5 years	56	104.18	1.204	(101.77, 106.59)		
Monthly Income (NRs)						
<30000	16	102.06	2.589	(96.54, 107.58)	2.888	0.039*
30000- 60000	45	103.60	1.246	(101.09, 106.11)		
60000-90000	26	101.85	1.813	(98.11, 105.58)		
>90000	24	108.46	1.587	(105.18, 111.74)		

*#Independent t-test one-way ANOVA SE: standard error CI: Confidence Interval * p-value significant <0.05*

DISCUSSION

The findings revealed that positive persuasion was the most commonly practiced feeding strategy among mothers (Median=16, IQR=14-17). This finding aligns with previous a U.S.-based study, suggesting that verbal encouragement such as telling children that food is healthy or likable (r= 0.31, p<0.01) is a commonly preferred and effective method of promoting healthy eating habits. Specifically, 58.6% of mothers in this study often or always told their children that food would make them healthy, smart, or strong, which reflects an understanding of the link between nutrition and health. [11,12]

The use of rewards, such as toys or desserts, was reported by 63.9% of mothers, reflecting a common yet concerning practice (Median=11, IQR=10-13). This practice raises concerns, as in a study conducted in Birmingham, United Kingdom, found that such extrinsic motivators—like offering food as a reward can undermine children's intrinsic interest in healthy foods and increase their preference for unhealthy options.[13] Similarly, in a U.S.-based quantitative study involving 148 parents, linked reward-based feeding to greater child preference for high-fat, high-sugar foods.[14] These findings reinforce that while rewards may encourage short-term compliance, they can undermine long-term healthy eating habits.

Among the background variables, monthly family income was the only factor significantly associated with feeding practice scores (F=2.888, p= 0.039). Mothers from higher-income families had higher mean scores, suggesting that better financial status may support healthier feeding behaviors. This finding is consistent with a study from Kathmandu observed that socio-economic status directly influenced food quality, diversity, and maternal flexibility in feeding decisions.[9]

Notably, the expected relationship between maternal occupation and feeding practices was not significant (p=0.784), although prior literature has suggested that employed mothers may face time constraints impacting meal planning.[15] This could imply that employed mothers in this sample were still able to maintain consistent feeding behaviors, possibly due to family support or flexible work conditions.

The findings on snack limitations and fat reduction show that many mothers in Pokhara are becoming more aware of healthy eating. However, the fact that up to 57.7% of mothers still allow daily consumption of sugary and salty snacks shows that challenges remain. This is supported by a study by a systematic review and meta-analysis at Harvard School of Public Health, USA, and established a significant association ($p < 0.001$) between frequent consumption of sugar-sweetened beverages and increased risk of childhood obesity.[16] Contrary to prior studies, maternal education and occupation were not significant, possibly due to the high literacy rate and relative homogeneity of the sample.

CONCLUSION

Mothers of preschoolers in Pokhara frequently stated positive persuasion and healthy food provision, while coercive feeding is least used in child feeding practice. Nonetheless, the persistence of reward-based feeding indicates the need for targeted education. Monthly family income was significantly associated with feeding practice, indicating the role of economic resources in shaping health-promoting behaviors. Community-level nutrition education programs should emphasize non-coercive, health-promoting feeding strategies to mothers of preschooler. Special focus should be given to low-income families, who may face greater challenges in providing healthy diets.

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