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The Relationship Between Preschoolers' Feeding Behavior and Maternal Feeding Attitudes: A Descriptive Cross-Sectional Study

Okul Öncesi Çocukların Beslenme Davranışları ile Annelerin Beslenme Tutumları Arasındaki İlişki: Tanımlayıcı Kesitsel Bir Çalışma

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ABSTRACT

Aim: *This study aimed to explore the link between maternal feeding attitudes and preschoolers' eating behaviors.*

Material and Method: *The descriptive, cross-sectional design involved 298 mothers of 4-6-year-old children from 6 preschools in Istanbul, Türkiye. Data were collected using three tools: a 25-question demographic information form, the MATS (Maternal Attitudes Towards Nutrition) to assess maternal feeding attitudes, and the BPFAS (Behavioral Pediatrics Feeding Assessment Scale) to evaluate children's feeding behaviors.*

Results: *The study revealed positive dietary habits, with 80.7% of children having regular breakfasts, 57.7% consuming daily fruits, and 66.2% consuming daily dairy products. Interestingly, a negative correlation emerged between positive maternal feeding attitudes and children's picky eating. A moderate positive correlation linked positive maternal nutritional attitudes with healthier eating behaviors in children. Conversely, a positive correlation between "Negative Affect During Eating" and "Forced Feeding" sub-dimensions suggests that pressuring tactics might negatively influence children's eating habits.*

Conclusion: *This study shows that higher maternal feeding attitude scores, indicating more problematic attitudes, were associated with more problematic eating behaviors in children. Proper timing of complementary feeding was also linked to balanced maternal attitudes. These results highlight the importance of nutrition education to support healthy eating habits in children.*

Keywords*: Childhood nutrition, Eating behaviors, Maternal attitudes, Parental influence, Preschoolers*

ÖZET

Amaç: *Bu çalışma, annelerin beslenme tutumları ile okul öncesi çocukların yeme davranışları arasındaki ilişkiyi incelemeyi amaçlamıştır.*

Gereç ve Yöntem*: Tanımlayıcı ve kesitsel tasarıma sahip bu çalışmaya, İstanbul, Türkiye'deki 6 anaokulundan 4-6 yaş arası çocukların anneleri (n=298) katılmıştır. Veriler, 25 sorudan oluşan demografik bilgi formu ile annelerin beslenme tutumlarını değerlendiren Beslenme Süreci Anne Tutumları Ölçeği (BSATÖ) ve çocukların beslenme davranışlarını değerlendiren Davranışsal Pediatrik Besleme Değerlendirmesi Ölçeği (DPBDÖ) kullanılarak toplanmıştır.*

Bulgular: *Çalışmada çocukların %80.7'sinin düzenli kahvaltı yaptığı, %57,7'sinin günlük meyve tükettiği ve %66.2'sinin günlük süt ürünleri tükettiği saptandı. Annelerin olumlu beslenme tutumları ile çocukların seçici yeme davranışı arasında negatif bir korelasyon bulundu. Ayrıca, olumlu annelik beslenme tutumları ile çocukların sağlıklı yeme alışkanlıkları arasında orta düzeyde pozitif bir korelasyon olduğu tespit edildi. "Yeme Sırasındaki Olumsuz Duygu" ile "Zorla Besleme" alt boyutları arasında pozitif bir korelasyon vardı. Bulgular, baskıcı yöntemlerin, çocukların yeme alışkanlıkları üzerinde olumsuz bir etkisi olabileceğini gösterdi.*

Sonuç: *Bu çalışma, olumlu annelik beslenme tutumlarının çocuklarda sağlıklı yeme davranışlarını desteklerken, olumsuz tutumların olumsuz etkileri olduğunu göstermektedir. Ek gıdaya doğru zamanda geçiş, dengeli annelik tutumlarıyla ilişkilendirilmiştir. Bulgular, çocuklarda sağlıklı yeme alışkanlıklarını desteklemek için beslenme eğitiminin önemini vurgulamaktadır.*

Anahtar kelimeler: *Çocuk beslenmesi, Yeme davranışları, Annelik tutumları, Ebeveyn etkisi, Okul öncesi çocuklar*

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INTRODUCTION

Healthy nutrition in childhood is one of the most important determinants of human health and a fundamental element supporting optimal growth and development. According to the latest global estimates, 148-149 million children under the age of five are stunted, and 45 million are underweight worldwide. Malnutrition is responsible for approximately 45% of deaths among children under five years of age, with the majority occurring in low- and middle-income countries (WHO, 2024, 2026; WHO et al., 2023). In addition to undernutrition, childhood overweight and obesity constitute an increasing global public health concern. It is estimated that 38.9 million children under the age of five are overweight, with the highest rates observed in high-income and upper-middle-income countries (WHO, 2026).

Healthy nutrition in childhood is a key determinant of growth, development, and long-term health. Globally, approximately 149 million children under five are stunted and 45 million are wasted, with malnutrition contributing to nearly 45% of under-five deaths, particularly in low- and middle-income countries (WHO, 2026). Recent evidence highlights that malnutrition in all its forms continues to pose a substantial global burden, with early childhood representing a critical window for establishing lifelong dietary patterns and influencing cognitive, metabolic, and health outcomes (Victora et al., 2021; WHO, 2024, 2026; WHO et al., 2023).

In Türkiye, although undernutrition indicators have improved over time, child malnutrition persists alongside rising overweight and obesity, reflecting a double burden of malnutrition. National and international data indicate that stunting prevalence has decreased to below 10% in recent years, while wasting remains relatively low (~2%). However, recent studies report that overweight and obesity rates among children can exceed 15%, highlighting a growing public health concern. This coexistence of undernutrition and overnutrition demonstrates that early childhood remains a critical period for establishing healthy dietary patterns and preventing both growth faltering and excessive weight gain.

Eating habits are established early in life and tend to persist into adulthood, underscoring the critical importance of developing healthy eating behaviors during early childhood (Battistini et al., 2020; Buja et al., 2020). Children who acquire healthy dietary habits at a young age are more likely to maintain these behaviors and experience better health outcomes in adulthood (CDC, 2021).

During the preschool period, children increasingly engage with their social environment, including family members and other caregivers. At this stage, eating behaviors are shaped by multiple factors, such as caregivers' feeding practices, food availability within the home, and parental modeling of dietary behaviors (Oudat et al., 2025). Consequently, the promotion of healthy eating habits during the preschool years is particularly important (CDC, 2021).

Parents play a central role in shaping children's eating behaviors and nutritional status. Through direct involvement in feeding and daily food choices, parents influence children's eating patterns and contribute to the development of long-term dietary behaviors (Ayine et al., 2020; Tang et al., 2020). Parental attitudes, beliefs, and personal eating behaviors are often transferred to children through role modeling, thereby affecting children's food preferences and eating behaviors (Heller & Mobley, 2019). Teaching and encouraging appropriate eating habits during early childhood can support the adoption of healthier dietary behaviors later in life. Indeed, parents are typically children's first nutrition educators, and children often look to their parents as role models for food choices and eating behaviors (Shakerinejad et al., 2025). Moreover, the preparation and provision of healthy meals within the home environment play a crucial role in fostering healthy eating habits among children (Baltaci et al., 2023)

Despite this influential role, parents may sometimes experience difficulties in managing their children's eating behaviors (Lamm et al., 2023). Feeding practices that place excessive emphasis on control, such as pressuring children to eat, using rewards, or applying punishment, have been shown to negatively affect children's eating behaviors and dietary habits (Burnett et al., 2023). Such practices may trigger an action–reaction cycle between parent and child, increasing food refusal and further complicating the feeding process (Lamm et al., 2023).

Previous research has consistently demonstrated a reciprocal relationship between children's eating behaviors and parental feeding practices (Berge et al., 2020; Costa et al., 2021). The associations between feeding practices, feeding styles, and

children's dietary intake and weight status have therefore attracted considerable attention from health professionals aiming to prevent childhood nutrition-related problems (Heller & Mobley, 2019). However, despite this growing body of evidence, there is still a need for a more comprehensive understanding of how maternal feeding attitudes are associated with specific feeding behavior patterns in preschool children, particularly when evaluated using multidimensional and validated assessment tools. In addition, studies examining these relationships within different cultural contexts, including Türkiye, remain limited. In this context, the critical role of parents and the influence of their feeding attitudes on children's eating behaviors form the basis of the present study. A better understanding of parental roles in early childhood nutrition is essential for supporting the development of healthy eating habits and establishing a foundation for healthy adulthood. Furthermore, identifying modifiable parental factors may contribute to the development of effective, family-centered interventions to promote healthy eating behaviors in preschool children. Accordingly, this study aims to determine the relationship between preschool children's feeding behaviors and their mothers' feeding attitudes.

Research Question

1. Is there a relationship between preschool children's feeding behavior and maternal feeding attitudes?
2. Do maternal and family-related characteristics influence children's feeding behaviors?

MATERIALS AND METHODS

Research Type

This study was conducted using a descriptive and cross-sectional design with a correlational approach.

Study Population and Sample

The study population consisted of 298 mothers of children aged 4–6 years attending six preschools in Istanbul, Türkiye. A convenience sampling method was used and, the preschools included in the study were selected based on accessibility and willingness to participate. Schools that granted institutional permission and agreed to take part in the study were included. This approach was adopted to ensure feasibility of data collection and an adequate sample size within the study period. No sample size calculation was performed, and an attempt was made to reach the entire population. A total of 213 mothers who voluntarily agreed to participate were included in the study, corresponding to a participation rate of 71.47%. Although no a priori sample size calculation was performed, a post-hoc power analysis was conducted using G*Power 3.1 software. Based on the observed correlation coefficient ($r = 0.65$), sample size ($n = 213$), and alpha level of 0.05, the statistical power ($1–\beta$) was found to be very high (power > 0.99), indicating that the study had sufficient power to detect the observed effect size.

Data Collection Tools

Information Form: *The Information Form* was developed by the researchers based on a review of the relevant literature. It consisted of 25 questions covering sociodemographic characteristics (e.g., the child's age and gender, parental education level and employment status, and family type) and children's dietary habits. In line with the literature, the dietary section included questions on meal patterns (e.g., breakfast routine) and the frequency of consumption of major food groups, including fruits, vegetables, dairy products, meat and poultry, grains, fast food, junk food, and acidic beverages (Buja et al., 2020; CDC, 2021; Oudat et al., 2025).

The Mother's Attitudes Towards the Feeding Process Scale (MATS): *The Mother's Attitudes Towards the Feeding Process Scale (MATS)* was developed by Dilsiz and Dağ (2020). The scale consists of 27 items and five sub-dimensions: Negative Affect During Meal (NADM), Attitudes about Insufficient/Unbalanced Feeding (AIUF), Negative Feeding Strategies (NFS), Forced Feeding (FF), and Reaction to Others' Viewpoints (RVO). In the original development study, the Cronbach's Alpha internal consistency coefficient of the total scale was reported as 0.91, with subscale reliability coefficients ranging from 0.70 to 0.92.

Each item is scored on a Likert-type scale, yielding a total score range from 27 to 135. Higher scores indicate more problematic maternal attitudes toward the feeding process. In the present study, the Cronbach's Alpha coefficient for the total scale was 0.91. The reliability coefficients of the sub-dimensions were 0.87 for NADM, 0.85 for AIUF, 0.66 for NFS, 0.73 for FF, and 0.65 for RVO.

The Behavioral Pediatric Feeding Assessment Scale (BPFAS): *The Behavioral Pediatric Feeding Assessment Scale (BPFAS)* was originally developed by Crist and Napier-Phillips (2001) and adapted into Turkish by Önal et al. (2017). The scale consists of 35 items rated on a 5-point Likert scale ranging from 1 (Never) to 5 (Always). Of these items, 25 assess the child's eating behaviors, while 10 evaluate parental feeding behaviors.

Total scores range from 35 to 175, with higher scores indicating more problematic feeding behaviors. In the Turkish adaptation study, four sub-dimensions related to children's eating behaviors were identified: picky eater, toddler refusal–general, toddler refusal–textured food, and older child refusal, with Cronbach's alpha coefficients ranging from 0.72 to 0.77.

Among the 25 child-related items, six items (items 1, 3, 5, 6, 9, and 16) are positively worded and were reverse-scored. The Cronbach's alpha coefficient of the scale was reported as 0.88 in the Turkish adaptation study and was found to be 0.84 in the present study. The reliability coefficients of the sub-dimensions in this study ranged between 0.51 and 0.67.

Data Collection

Data were collected from mothers of children aged 4–6 years attending six preschools in Istanbul, Türkiye. Data collection forms were distributed to mothers through preschool teachers. Mothers who were informed about the study and provided voluntary consent completed the questionnaires at home and returned them in sealed envelopes via their children to the teachers. Completion of the data collection forms took approximately 20 minutes.

Ethical Consideration

Institutional permission was obtained from the preschools where the study was conducted. Ethical approval was granted by the university ethics committee (Date: 22.02.2019 and Approval Number: 69817). Mothers were informed about the purpose and procedures of the study through preschool teachers, and verbal and written informed consent was obtained from all participants prior to data collection.

Data Analysis

Data were analyzed using IBM SPSS Statistics version 15 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. The normality of continuous variables was assessed using the Kolmogorov–Smirnov test. As the data did not follow a normal distribution, Spearman's rank correlation analysis was performed to examine the relationships between variables. A p-value of <0.05 was considered statistically significant.

RESULTS

The descriptive characteristics of the preschool children and their families are presented in Table 1. The mean age of the children was 4.95 ± 0.72 years (range: 4–6 years), with the majority being five years old (42.2%). Slightly more than half of the children were male (52.6%). Based on body mass index percentiles, 56.8% of the children were of normal weight, while 17.4% were overweight and 18.8% were classified as obese.

More than half of the families had two children (54.9%), and the mean number of individuals living in the household was 3.60 ± 0.87. The mean age of mothers was 34.80 ± 5.15 years (min-max: 26.00-53.00), and 56.8% were aged 34 years or older. The mean age of fathers was 38.23 ± 5.81 years (min-max: 28.00-56.00), with 51.2% being younger than 38 years. Over half of the mothers (53.1%) and 43.2% of the fathers had a bachelor's degree. While 41.3% of mothers were employed, the vast majority of fathers (97.2%) were working. Most families were nuclear families (82.6%).

Mothers were primarily responsible for their children's nutrition (90.1%). The majority of children consumed three meals per day (64.3%). Regarding early feeding practices, 46% of children had received formula feeding during infancy, and complementary feeding was initiated at an average age of 5.89 ± 1.80 months (range: 0.00–18.00 months) (Table 1).

Children's dietary consumption characteristics are summarized in Table 2. Regular breakfast consumption was reported for 80.7% of the children. Daily fruit consumption was observed in 57.8% of the sample, whereas only 28.2% consumed vegetables on a daily basis. Dairy products were consumed every day by 66.3% of the children, while meat and poultry were most commonly consumed twice a week (30.0%). Grain products were consumed daily by 43.2% of the children. Nearly half of the children reported not consuming fast food (46.5%), whereas only a

small proportion of children did not consume junk food (3.8%). In addition, 59.2% of the children did not consume acidic beverages (Table 2).

Table 1. Descriptive Characteristics of the Children and Family

Feature	Category	n	%
Age	4	75	35.2
	5	90	42.3
	6	48	22.5
Gender	Female	101	47.4
	Male	112	52.6
Body Mass Index (BMI)	Underweight (<5 percentile)	15	7.0
	Normal weight (5-85 percentile)	121	56.8
	Overweight (>85-95 percentile)	37	17.4
	Obesity (>95 percentile)	40	18.8
Number of children in families	1	70	32.9
	2	117	54.9
	3 or more	26	12.2
Age of mothers	Under 34 years	92	43.2
	34 years and above	121	56.8
Age of fathers	Under 38 years	109	51.2
	38 years and above	104	48.8
Mothers' education	Primary school	46	21.5
	High school	54	25.4
	Bachelor	113	53.1
Fathers' education	Primary school	55	25.8
	High school	66	31.0
	Bachelor	92	43.2
Mothers' work status	Yes	88	41.3
	No	125	58.7
Fathers' work status	Yes	207	97.2
	No	6	2.8
Family Type	Nuclear Family	176	82.6
	Extended Family	31	14.6
	Broken Family	6	2.8
Number of people living in the family	3	74	34.7
	4	93	43.7
	5 and more	46	21.6
Person responsible for child's nutrition	Mother	192	90.1
	Father	7	3.3
	Grandfather/Grandmother	14	6.6
Number of child's meals a day	3 meals	137	64.3
	4 meals	62	29.1
	5 meals	14	6.6
Formula feeding in infancy	Yes	98	46
	No	115	54
Complementary feeding initiation age	Under 4 months	11	5.1
	4-6 months	157	73.7
	Over 6 months	45	21.2

n: Count, %: Column percentage

Table 2. Dietary Consumption Characteristics of the Children

Feature	Category	n	%
Breakfast Routine	Never	4	1.9
	Irregular	37	17.4
	Regular	172	80.7
Fruit Consumption	Twice a day	29	13.6
	Every day	123	57.8
	Every other day	36	16.9
	Twice a week	20	9.4
	Once a week	5	2.3
Vegetable Consumption	Twice a day	8	3.7
	Every day	60	28.2
	Every other day	52	24.4
	Twice a week	49	23.0
	Once a week	33	15.5
	Doesn't eat	11	5.2
Dairy Products Consumption	Twice a day	23	10.8
	Every day	141	66.3
	Every other day	28	13.1
	Twice a week	10	4.7
	Once a week	9	4.2
	Doesn't eat	2	0.9
Meat and Poultry Consumption	Twice a day	3	1.4
	Every day	47	22.1
	Every other day	60	28.1
	Twice a week	64	30.0
	Once a week	31	14.6
	Doesn't eat	8	3.8
Grain Consumption	Twice a day	3	1.4
	Every day	92	43.2
	Every other day	41	19.2
	Twice a week	58	27.2
	Once a week	19	9.0
Fast-food Consumption	Twice a day	2	0.9
	Every day	3	1.4
	Twice a week	15	7.0
	Once a week	65	30.5
	Twice a month	15	7.0
	Once a month	14	6.6
	Doesn't eat	99	46.5
Junk Food Consumption	Twice a day	6	2.8
	Every day	93	43.7
	Every other day	40	18.7
	Twice a week	42	19.7
	Once a week	24	11.3
	Doesn't eat	8	3.8
Acidic Beverage Consumption	Every day	9	4.3
	Every other day	4	1.9
	Twice a week	20	9.4
	Once a week	41	19.2
	Twice a month	5	2.3
	Once a month	8	3.7
	Doesn't eat	126	59.2

The mean total score of the Mother's Attitudes Towards the Feeding Process Scale (MATS) was 61.24 ± 17.72. Among the sub-dimensions, the highest mean score was observed for attitudes toward inadequate/unbalanced feeding (24.90 ± 7.76), followed by negative affect during meals (12.52 ± 5.23). Mean scores for negative feeding strategies, forced feeding, and reaction to others' viewpoints were 9.66 ± 3.62, 5.49 ± 2.28, and 8.64 ± 3.80, respectively.

The mean total score of the Behavioral Pediatric Feeding Assessment Scale (BPFAS) was 53.94 ± 10.73. Among the sub-dimensions, the highest mean scores were observed for older child refusal (18.25 ± 4.06) and picky eater behaviors (17.96 ± 4.01). Detailed scale and subscale scores are presented in Table 3.

Table 3. Scores and Sub-dimensions of MATS and BPFAS (n=213)

Scales		Mean ± SD	Median (IR)	Min-Max
MATS		61.24 ± 17.72	60.00 (25.00)	28.00-135.00
MATS Subscales	Negative affect during meal	12.52 ± 5.23	12.00 (6.00)	6.00-30.00
	Attitudes toward inadequate/unbalanced feeding	24.90 ± 7.76	25.00 (13.00)	8.00-40.00
	Negative feeding strategies	9.66 ± 3.62	9.00 (5.00)	5.00-25.00
	Forced feeding	5.49 ± 2.28	4.00 (3.00)	4.00-20.00
	Reaction to others' views	8.64 ± 3.80	8.00 (6.00)	4.00-20.00
BPFAS		53.94 ± 10.73	52.00 (14.00)	35.00-87.00
BPFAS Subscales	Picky eater	17.96 ± 4.01	17.00 (6.00)	9.00-32.00
	Toddler refusal - general	10.53 ± 3.40	10.00 (5.00)	5.00-22.00
	Toddler refusal - textured food	7.18 ± 2.61	6.00 (4.00)	5.00-17.00
	Older child refusal	18.25 ± 4.06	18.00 (6.00)	9.00-31.00
	Family	21.78 ± 5.05	21.00 (7.00)	12.00-38.00

Correlation analyses between demographic characteristics, MATS, and BPFAS scores are presented in Table 4. A weak negative correlation was found between the duration of mothers not working postpartum and the picky eater sub-dimension ($rs = -0.146$, $p < 0.05$).

The age of initiation of complementary feeding showed weak negative correlations with the total MATS score and the sub-dimensions of negative affect during meals, attitudes toward inadequate/unbalanced feeding, and negative feeding strategies (rs ranging from −0.171 to −0.276). Similarly, weak negative correlations were observed between complementary feeding initiation age and the total BPFAS score, as well as the toddler refusal–general, toddler refusal–textured food, and older child refusal sub-dimensions (rs ranging from −0.140 to −0.189).

A weak negative correlation was identified between the age of initiation of formula feeding and the negative affect during meals sub-dimension ($rs = -0.160$, $p < 0.05$). In contrast, a moderate positive correlation was found between the total MATS and BPFAS scores ($rs = 0.655$, $p < 0.01$).

Weak to moderate positive correlations were observed between MATS and the picky eater sub-dimension ($rs = 0.399$), as well as the toddler refusal–general, toddler refusal–textured food, and older child refusal sub-dimensions ($rs = 0.650$, 0.438, and 0.506, respectively). Additionally, moderate positive correlations were identified between BPFAS and the MATS sub-dimensions of negative affect during meals, attitudes toward inadequate/unbalanced feeding, negative feeding strategies, and forced feeding (rs ranging from 0.505 to 0.646). A weak positive correlation was found between BPFAS and reaction to others' viewpoints ($rs = 0.322$).

No statistically significant correlations were observed between body mass index, exclusive breastfeeding duration, weaning duration, and MATS or BPFAS total and subscale scores ($p > 0.05$).

Table 4. Correlations Between Demographic Characteristics, MATS and BPFAS

	7	8	9	10	11	12	13	14	15	16	17
1. BMI	r_s: -0.071	r_s: -0.027	r_s: -0.134	r_s: -0.053	r_s: 0.023	r_s: 0.094	r_s: 0.021	r_s: 0.054	r_s: -0.082	r_s: 0.015	r_s: 0.039
2. Mothers not working postpartum (months)	r_s: -0.088	r_s: -0.064	r_s: -0.055	r_s: -0.010	r_s: -0.099	r_s: -0.085	r_s: -0.103	**r_s: -0.146***	r_s: -0.059	r_s: 0.008	r_s: -0.021
3. Exclusive breastfeeding duration (months)	r_s: -0.070	r_s: -0.036	r_s: -0.125	r_s: -0.053	r_s: -0.027	r_s: -0.002	r_s: -0.006	r_s: 0.064	r_s: -0.023	r_s: -0.066	r_s: -0.016
4. Weaning duration (months)	r_s: 0.035	r_s: 0.045	r_s: -0.004	r_s: 0.091	r_s: 0.065	r_s: -0.027	r_s: 0.023	r_s: 0.055	r_s: 0.066	r_s: -0.006	r_s: -0.020
5. Complementary feeding initiation age (months)	**r_s: -0.240****	**r_s: -0.208****	**r_s: -0.276****	**r_s: -0.171***	r_s: -0.118	r_s: -0.112	**r_s: -0.145***	r_s: -0.008	**r_s: -0.140***	**r_s: -0.189****	**r_s: -0.152***
6. Formula feeding initiation age (months)	r_s: -0.100	**r_s: -0.160***	r_s: -0.056	r_s: -0.043	r_s: -0.017	r_s: -0.091	r_s: -0.100	r_s: -0.058	r_s: -0.062	r_s: 0.005	r_s: -0.126
7. MATS	-	**r_s: 0.820****	**r_s: 0.914****	**r_s: 0.749****	**r_s: 0.513****	**r_s: 0.560****	**r_s: 0.655****	**r_s: 0.399****	**r_s: 0.650****	**r_s: 0.438****	**r_s: 0.506****
8. Negative affect during meal	-	-	**r_s: 0.681****	**r_s: 0.525****	**r_s: 0.419****	**r_s: 0.304****	**r_s: 0.646****	**r_s: 0.457****	**r_s: 0.620****	**r_s: 0.414****	**r_s: 0.439****
9. Attitudes toward inadequate/unbalanced feeding	-	-	-	**r_s: 0.627****	**r_s: 0.338****	**r_s: 0.407****	**r_s: 0.508****	**r_s: 0.272****	**r_s: 0.523****	**r_s: 0.340****	**r_s: 0.441****
10. Negative feeding strategies	-	-	-	-	**r_s: 0.430****	**r_s: 0.273****	**r_s: 0.526****	**r_s: 0.359****	**r_s: 0.546****	**r_s: 0.362****	**r_s: 0.347****
11. Forced feeding	-	-	-	-	-	**r_s: 0.263****	**r_s: 0.505****	**r_s: 0.308****	**r_s: 0.475****	**r_s: 0.357****	**r_s: 0.388****
12. Reaction to others' views	-	-	-	-	-	-	**r_s: 0.322****	r_s: 0.133	**r_s: 0.321****	**r_s: 0.250****	**r_s: 0.296****
13. BPFAS	-	-	-	-	-	-	-	**r_s: 0.705****	**r_s: 0.831****	**r_s: 0.637****	**r_s: 0.754****
14. Picky eater	-	-	-	-	-	-	-	-	**r_s: 0.441****	**r_s: 0.306****	**r_s: 0.265****
15. Toddler refusal - general	-	-	-	-	-	-	-	-	-	**r_s: 0.552****	**r_s: 0.578****
16. Toddler refusal - textured food	-	-	-	-	-	-	-	-	-	-	**r_s: 0.332****
17. Older child refusal	-	-	-	-	-	-	-	-	-	-	-

$p<0.05$, $**p<0.01$. rs: Spearman's rank correlation coefficient

DISCUSSION

This study examined the relationship between preschool children's feeding behaviors and their mothers' feeding attitudes. It also considered the children's dietary characteristics and selected family-related factors. The findings provide further evidence that maternal attitudes toward feeding are closely intertwined with children's eating behaviors during early childhood, when dietary patterns and self-regulation around food are rapidly established.

Consistent with contemporary literature, the results underscore the importance of early childhood as a critical period for developing lifelong eating habits. Primary caregivers, particularly mothers, play a central role in this process by modeling behavior, structuring mealtimes, and creating an emotionally supportive feeding environment. The present study observed a high prevalence of regular breakfast consumption among preschool children. This finding is consistent with evidence identifying regular breakfast consumption as an indicator of structured eating routines and healthier overall dietary patterns in early childhood (Oudat et al., 2025). Nevertheless, despite regular meal patterns, vegetable consumption remained suboptimal. Similar discrepancies between meal regularity and dietary quality have been reported in recent studies, indicating that children's vegetable intake is sensitive to parental feeding styles, food availability at home, and parental perceptions of feeding difficulties (Fontanezi et al., 2024). These findings suggest that structured mealtimes alone may be insufficient to ensure dietary balance and highlight the need to address qualitative aspects of feeding within the family context. Collaborative efforts between families and educational settings have been recommended to support healthier food environments and improve dietary balance among preschoolers (Rosales et al., 2023). This finding supports theoretical models suggesting that caregiver feeding attitudes influence children's eating behaviors through both behavioral modeling and emotional feeding climates.

This study found that parental feeding attitudes are a key determinant of children's eating behaviors. Consistent with current recommendations that emphasize responsive and supportive feeding practices (CDC, 2021), less problematic and more adaptive maternal feeding attitudes were associated with healthier eating behaviors and fewer problematic feeding patterns in children. These results support previous research showing that parental attitudes and beliefs about feeding influence children's food preferences, eating autonomy, and responsiveness to hunger and satiety cues (Ayine et al., 2020; Costa & Oliveira, 2023). However, the presence of less adaptive maternal attitudes, such as heightened concern about inadequate or imbalanced diets and the use of forced feeding strategies, suggests that some mothers may adopt controlling approaches in response to perceived nutritional risks. Similar patterns have been documented in the literature, indicating that coercive feeding practices are often rooted in parental anxiety but may paradoxically exacerbate feeding difficulties and undermine children's self-regulation (Azak & Gözen, 2025; Burnett et al., 2023). The mean MATS score in the present study indicated a moderate level of maternal feeding attitudes. However, substantial heterogeneity in maternal approaches to feeding is evident, as scores varied widely. This variability mirrors previous study findings showing that feeding attitudes exist along a continuum shaped by individual, cultural, and contextual factors (Costa et al., 2021; Heller & Mobley, 2019). Importantly, moderate positive correlations between MATS and BPFAS scores indicate that more problematic maternal feeding attitudes are associated with greater feeding difficulties in children. This finding is consistent with the literature demonstrating a reciprocal relationship between parental feeding practices and children's eating behaviors over time (Berge et al., 2020).

Parental concerns about their children's weight and nutritional adequacy appear to significantly impact feeding practices. Previous studies have shown that mothers who perceive their children as undernourished or at risk of becoming overweight are more likely to engage in pressuring or restrictive feeding behaviors (Haines et al., 2018). Although these practices are intended to promote adequate nutrition, they have been linked to poorer dietary quality and increased feeding conflicts. Conversely, supportive and encouraging feeding approaches have been associated with improved dietary quality and healthier weight trajectories in children (Tang et al., 2020). The associations observed in this study between maternal feeding attitudes and children's feeding behaviors further support the importance of addressing parental concerns and beliefs in nutrition-focused interventions.

Family context variables also contribute to

children's eating behaviors. Consistent with previous research highlighting the central role of mothers in early childhood nutrition (Costa & Oliveira, 2023), maternal employment status was identified as a significant factor. Lower food selectivity was observed among children of mothers who did not work after childbirth, potentially reflecting increased time spent on feeding interactions, meal preparation, and responsive caregiving. Similar findings have been reported, suggesting that maternal availability and family routines may influence children's exposure to diverse foods and feeding experiences (Andrade & Gil, 2023). However, this association should be interpreted cautiously, as maternal employment may interact with broader socioeconomic and contextual factors that this study did not fully capture.

The timing of introducing complementary foods was another factor associated with maternal feeding attitudes and children's eating behaviors. Mothers who introduced complementary foods at developmentally appropriate times exhibited more adaptive feeding attitudes and demonstrated fewer negative emotional responses during mealtimes. These results align with prior studies suggesting that maternal attitudes and self-efficacy, rather than knowledge alone, are pivotal in shaping complementary feeding practices (Owais et al., 2019). Appropriate timing of complementary feeding may reflect broader patterns of responsive parenting, supporting healthier feeding dynamics and child eating behaviors.

Overall, this study contributes to the existing literature by demonstrating meaningful associations between maternal feeding attitudes and preschool children's eating behaviors in a community sample. The findings highlight modifiable targets, such as parental attitudes, emotional responses during feeding, and feeding strategies, that can be addressed through early, family-centered interventions aimed at promoting healthy eating behaviors in preschool children.

Limitations of the Research

This study has several limitations. First, the study population was limited to mothers of preschool children from six preschools in Istanbul, Türkiye. This may not be representative of the broader population, especially considering the cultural and socioeconomic diversity within and outside of Istanbul, Türkiye. The results may not be generalizable to other regions or populations. Second, the study used a cross-sectional design that collected data at a single point in time. This limits the ability to establish causality or determine the direction of the relationship between maternal feeding attitudes and child feeding behaviors. Longitudinal studies could provide more robust evidence of causal relationships over time.

CONCLUSION

In conclusion, the findings of this study suggest that maternal feeding attitudes are closely linked to the eating behaviors of preschool-aged children. More positive and supportive feeding attitudes were associated with healthier eating patterns in children, while negative and controlling practices were linked to less favorable feeding behaviors. Additionally, mothers who introduced complementary foods at the appropriate time exhibited more balanced and adaptive feeding attitudes.

These results underscore the pivotal role of maternal feeding practices in early childhood and highlight the complexity of family feeding dynamics in shaping children's eating behaviors. From a practical standpoint, these findings suggest that interventions promoting healthy eating in preschoolers should address parental attitudes, concerns, feeding strategies, and nutritional knowledge. Providing families with evidence-based nutrition education and tailored guidance could promote healthier eating behaviors in early childhood and contribute to long-term health outcomes.

Ethics Committee Approval

Ethics committee approval was received for this study from the Istanbul University-Cerrahpaşa Social and Human Sciences Research Ethics Committee (Date: 22.02.2019, and Approval Number: 69817).

Author Contributions

Idea/Concept: M.A., B.M.; Design: M.A., B.M.; Supervision/Consulting: M.A., B.M.; Analysis and/or Interpretation: M.A., B.M., Y.T.; Literature Search: M.A., B.M.; Writing the Article: M.A., B.M.; Critical Review: M.A., B.M., Y.T.

Peer-review

Externally peer-reviewed.

Conflict of Interest

The authors have no conflict of interest to declare.

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