

Prevalence of Food Neophobia and Picky Eating: A Descriptive study among mothers of under-five children attending selected paediatric units of AIMS, Kochi, Ernakulam, Kerala State, India

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Abstract

Young children are famous for being food neophobics (fear of eating new or unfamiliar foods) and picky eaters (child with many food dislikes) so much that nearly every parent has struggled with their UFC during meal at one time or another. A descriptive study was done to assess FN and PE among UFC as reported by their mothers'. Results revealed that among UFC 37% were food neophobics. Distribution of PE depicted 71% were moderate in pickiness, 16% were low in pickiness while 13% were high in pickiness. There was positive correlation ($r = 0.357$, $p < 0.001$) between FN and PE among UFC. FN and PE had significant association with selected demographic variables. When aiming to influence children's food preferences, the effects of FN and PE and strategies to reduce it should be considered.

Keywords- FN- Food Neophobia, PE- Picky Eating, UFC- Under-five Children, PU- Paediatric Units.

1. Introduction

Most of the children eat a variety of foods until they are around 2 years old, then they suddenly stop. This phase can last until the child is 4 or 5. Researchers believe it is an evolutionary response. A natural scepticism of new foods is a healthy part of child's development. Certain new foods, and especially vegetables, are refused systematically by many children. These new foods are also known as novel foods is refused by children. It is what is known as food neophobia, a mechanism to instinctively refuse to try new foods. Food neophobia is the fear of eating new or unfamiliar foods. It differs from selective eating disorder. Food neophobia is particularly common in toddlers and young children. Similarly picky eating is a disorder that is rarely diagnosed as a clinical problem in today's society where people assume that restrictive eating represents "healthful", discerning and disciplined eating. Children of all ages commonly have a few food dislikes. A picky eater is a child with many food dislikes. At age 2 or 3, up to 20 percent of children are picky eaters. It is seen extreme food neophobics and picky eaters to have negative consequences later in life. Food neophobia and picky eating may result in growth failure, susceptibility to chronic illness, and even death if not properly treated. They may also be warning signs of development of an eating disorder later in life. They may have harmful nutritional effects as well.

2. Objectives

1. To assess food neophobia among under-five children as perceived by their mothers'.
2. To identify the picky eating behaviour among under-five children as perceived by their mothers'.
3. To determine the correlation between food neophobia and picky eating behaviour among under-five children.
4. To find association between food neophobia among under-five children and selected demographic variables.
5. To find association between picky eating among under-five children and selected demographic variables.

3. Methodology

Study design: Non-experimental descriptive study design

Study area: Paediatric OPD and Paediatric medical ward(annexe) of AIMS, Kochi

Study Population

Target population: All mother's of under-five children visiting AIMS, Kochi

Accessible population: All mothers of under-five children attending pediatric OPD and admitted in pediatric medical ward

Inclusion criteria

- Mothers of under-five children.
- Mothers who have been staying with their children since birth.

Exclusion criteria

- Mothers who are not willing to participate in the study.

Study period: January 2015-February 2015

Study tool:

Tool1: Demographic profile of child and mother.

Tool 2: A standardized tool Child Food Neophobia scale consisting of ten questions.

Tool 3: A self designed Child picky eating assessment scale with 15 questions.

Sample size: 200

Sampling technique: Simple Random sampling

Data analysis: Data entry and analysis done using Microsoft excel and SPSS version 21. The quantitative variables are expressed as percentage, mean and SD. Chi-square along with Fishers exact test was done to find the association.

Ethical clearance: Authorization for the research was obtained from the thesis review committee of AIMS Hospital, Kochi. The importance of the study was explained to the participants and participation was voluntary. Full confidentiality and participant's rights were maintained.

4. Results

Considering the age group of subjects, 39 (39%) belonged to the age group between 3.5-5 years, 39(39%) belonged to the age group between 1.5-3.5 years and 20(20%) of age belong to age group upto 1.5 years. Regarding weight of the child 35(35%) weighed between 5-10 kg, 53(53%) weighed between 11-15 kg and 12(12%) weighed above 15 kg. Regarding gender 54(54%) were males and 46 (46%) were females. On birth status 68(68%) were born as pre-term while 32(32%) as term babies. On birth order 42(42%) were first born, 50(50%) were second born, while 8(8%) were third born and there were none in fourth and above. About duration of breast feeding 33(33%) were fed upto 6 months of age, 19(19%) were fed upto 6 months-12months, 48(48%) were breast fed for more than 12 months. Regarding age of weaning majority, 73(73%) were started on weaning foods, 22(22%) were started on after 6 months and 5(5%) were started after 1 year of age. About number of meals none of the children were provided with one meal, 8(8%) were given two meals per day, 30(30%) were given 3 meals per day and 62(62%) were given more than 3 meals. Regarding dietary pattern of the child majority 77(77%) had mixed diet, 21(21%) had non-vegetarian diet and 2(2%) had vegetarian diet. About history of food allergies none of the children had food allergy. It was seen that 36(36%) children chew food with front teeth while 76(76%) did not. About vomiting on seeing or eating food with certain texture 36(36%) children vomitted on seeing or eating food with certain texture while 76(76%) did not. The results were given in Table 1.

Table 1: frequency and percentage distribution of subjects based on demographic characteristics.

Demographic variables	Frequency	Percentage (%)
Age of the child (in months/years)		
Up to 1.5 years	20	20
1.5 – 3.5 years	39	39
3.5 – 5.0 years	41	41
Weight of the child (in kilogram)		
5 to 10 kg	35	35
11 to 15 kg	53	53
Above 15 kg	12	12

Gender		
Male	54	54
female	46	46
Birth status		
Pre-term	68	68
Term	32	32
Birth order		
First	42	42
Second	50	50
Third	8	8
Fourth or above	-	-
Duration of breast feeding		
Upto 6 months		
6-12 months	33	33
More than 12 months	19	19
	48	48
Age of weaning		
By 6 months		
After 6 months	73	73
After 1 year	22	22
	5	5
Number of meals		
1		
2	-	-
3	8	8
More than 3	30	30
	62	62
Dietary pattern of child		
Vegetarian		
Non-vegetarian	2	2
Mixed	21	21
	77	77
History of food allergies		
Yes		
No	-	-
	100	100
Chews food with front teeth		
Yes		
No	24	24
	76	76
Vomits on seeing or eating food with certain texture		
Yes		
No	36	36
	64	64

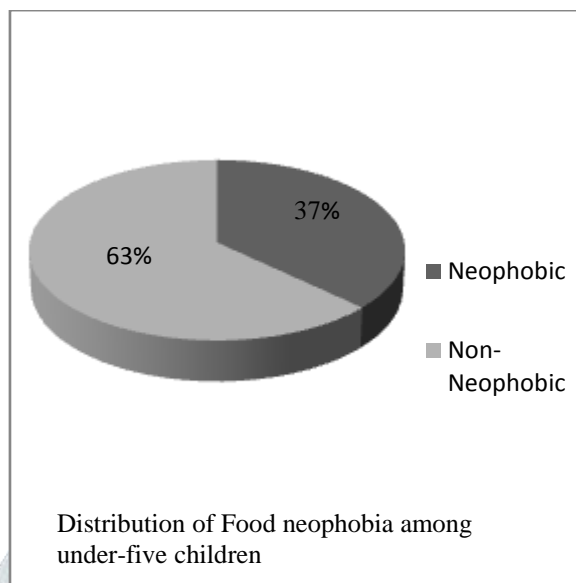


Figure 1: Distribution of Food neophobia among under-five children

Figure 1: depicts that 63(63%) under-five children were non-neophobic while 37(37%) were neophobic.

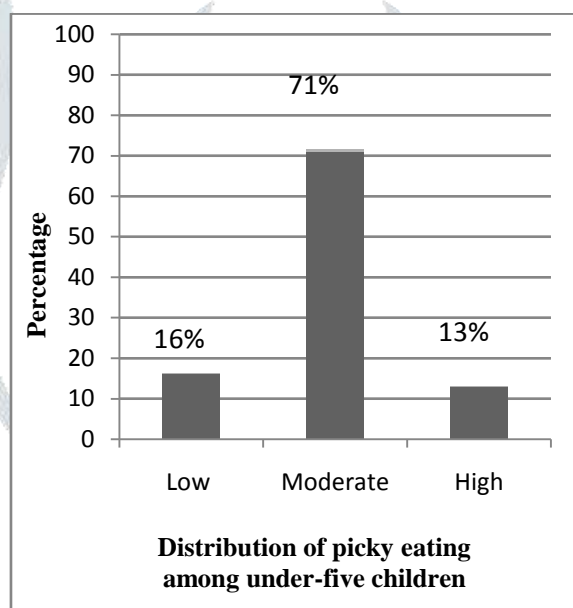


Figure 2: Distribution of picky eating among under-five children

Figure 2: depicts that 71(71%) were moderate which included majority of under-five, 16%(16%) were in low in pickiness, only 13(13%) were high in pickiness.

Table 2: Correlation between child food neophobia and picky eating among under-five children .

	Mean	SD	Correlation	p-value
Child food neophobia	33.36	8.549		
Child picky eating	43.91	9.768	0.357	0.001

Table 2: The results of correlation between child food neophobia and picky eating among under-five children showed that there was a positive correlation ($r=0.357$, $p>0.001$). So as food neophobia increases pickiness was also found to increase.

Table 3: Association between food neophobia among under-five children and selected demographic variables.

Demographic variables	Childfood	Neophobia	p-value
	Non-neophobic	Neophobic	
Age of the child (in months/years)			
Up to 1.5 years	9 (45.0%)	11 (55.0%)	0.041
1.5 – 3.5 years	30 (76.9%)	9 (23.1%)	
3.5 – 5.0 years	24 (58.5%)	17 (41.5%)	
Gender			
Male	28 (51.9%)	26 (48.1%)	0.012
female	35 (76.1%)	11 (23.9%)	
Age of weaning			
By 6 months	47 (64.4%)	26 (35.6%)	0.008
After 6 months	16 (72.7%)	6 (27.3%)	
After 1 year	0 (0.0%)	5 (100.0%)	
Number of meals			
1	-	-	0.058
2	8 (100.0%)	0 (0.0%)	
3	17 (56.7%)	13 (43.3%)	
More than 3	38 (61.3%)	24 (38.7%)	
Vomits on seeing or eating food with certain texture			
Yes	32 (88.9%)	4 (11.1%)	0.001
No	31 (48.4%)	33 (51.6%)	

Table 3: depicts that a significant association exists between age of the child, gender, age of weaning, number of meals and vomiting on eating certain foods.

Table 4: Association between picky eating among under-five children and selected demographic variables.

Demographics	Child Pickiness			P-value
	Low	Medium	High	
Weight of the child (in kilo-gram)				
5 to 10	9 (25.7%)	21 (60.0%)	5 (14.3%)	0.001
11 to 15	2 (3.8%)	45 (84.9%)	6 (11.3%)	
Above 15	5 (41.7%)	5 (41.7%)	2 (16.7%)	

Birth status				
Pre-term	16 (23.5%)	48 (70.6%)	4 (5.9%)	0.001
Term	0 (0.0%)	23 (71.9%)	9 (28.1%)	
Number of meals				
1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0.006
2	0 (0.0%)	2 (100.0%)	0 (0.0%)	
3	6 (20.0%)	21 (100.0%)	0 (0.0%)	
More than 3	10 (16.1%)	48 (62.3%)	13 (16.9%)	
Dietary pattern of child				
Vegetarian	0 (0.0%)	2 (100.0%)	0 (0.0%)	0.058
Non-vegetarian	0 (0.0%)	21 (100.0%)	0 (0.0%)	
Mixed	16 (20.8%)	48 (62.3%)	13 (16.9%)	
Chews food with front teeth				
Yes	2 (8.3%)	22 (91.7%)	0 (0.0%)	0.015
No	14 (18.4%)	49 (64.5%)	13 (17.1%)	

Table 4: depicts that a significant association exists between weight of the child, birth status, dietary pattern of child, number of meals.

5. Discussion

Between 20% and 60% of parents state that their young children refuse new foods, are not eating optimally, that is, that they are too selective or “picky,” eat too little, fail to advance to more complex food, or eat “junk food. Results of the present study revealed that among UFC 37% were food neophobics. Distribution of PE depicted 71% were moderate in pickiness, 16% were low in pickiness while 13% were high in pickiness. Goh DYT and Jacob a conducted a study in 2012 on perception of picky eating among children in Singapore and its impact on caregivers. Subjects were, 407 parents of children aged 1-10 years in Singapore. The highest number of respondents first noticed the child’s picky eating behaviours or feeding difficulties as early as 1 year. The perceived prevalence and duration of picky eating behaviour and feeding difficulties were high. The impact on the respondent and family relationships appears to be significant in Singapore.

The results of correlation between FN and PE among UFC depicted a positive relation. Galloway AT, Lee Y, Birch LL in 2003 conducted a study to assess Predictors and consequences of food neophobia and pickiness in young girls. Results revealed neophobia and pickiness were modestly related in this sample, but had different predictors. Girls with food neophobia were more anxious and had mothers with food neophobia. Picky girls had mothers with less variety in their vegetable intake ($r=-0.22$) and mothers who perceived their family to have little time to eat healthful foods ($r=0.36$).

FN had association with selected demographic variables like age, gender, age of weaning, number of meals, vomiting on eating certain foods. Association between PE and selected demographic variables showed significant association between weight of the child, birth status, dietary pattern of child, number of meals. The present study findings were contraindicated in another study conducted by A study conducted by Finistrella V, Manco M, Ferrara A, Rustico C, Presaghi F, Morino G, to investigate cross-

sectional associations of food neophobia and pickiness in preschoolers and in their mothers with regard also to food consumption, proposal of new foods, feeding, and weaning modes in Italy in 2012 . results revealed Pickiness and neophobia were related within both children's ($r(o) = 0.528$, $p = 0.001$) and mothers' ($r(o) = 0.186$, $p = 0.037$) samples. Mothers' and children's neophobia and pickiness were significantly although modestly associated (neophobia $r(o) = 0.223$, $p = 0.012$; pickiness $r(o) = 0.311$, $p = 0.001$). No significant relationships ($P < .01$) were observed between food neophobia and a child's age, sex, or history of breast-feeding.

6. Limitations

The present study was conducted within a short period of time and generalized to a small sample.

7. Conclusion

The results confirm there is a prevalence of food neophobia and picky eating among under-five children. Studies related to this topic is fewer in number. When aiming to influence children's food preferences, the effects of food neophobia and pickiness and also strategies to reduce it should be considered. Hence, future longitudinal studies of larger samples are necessary to better define the role of genetics, parental feeding practices, and environmental characteristics in the development of food neophobia and pickiness.

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