

Effectiveness of Instructional Program on Parents' Knowledge Concerning Management of Picky Eating Behavior among Children under Five Years of Age

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ABSTRACT

Objective: To assess parents' knowledge concerning management of picky eating behaviors. To determine the effectiveness of instructional program on parents' knowledge through comparing the knowledge scores at the pre-test and post-test.

Methodology: To achieve the aims of this study, this quasi-experimental design was conducted on children suffering from picky eating behavior assigned to study and control groups is used to study the effectiveness of instructional program on parents' knowledge toward dietary patterns for children with picky eating behavior at Al-Zahra Teaching Hospital in Al-Najaf Al-Ashraf City, and the study has been carried out during the period 25th February 2021 to 15th January 2022. Questionnaires were developed to determine the effectiveness of the instructional program on parents' knowledge toward dietary patterns for children with picky eating behavior. The final instruments consisted of (4) parts First: concept of picky eating behavior in children (Includes four questions) Second: causes of picky behavior and dangerous factors (Includes eight questions) Third: symptoms of picky behavior (It includes six questions) Fourth: importance of a child's picky eating behavior diet (It consists of seven questions) Fifth: ways to deal with the child picky eating behavior in food (It contains seven questions) Sixth: therapeutic and guiding measures for picky eating children (It has thirteen questions)

Result: There is an improvement in the parents' level of knowledge following the application of instructional program on parents' knowledge Management of Picky Eating Behaviors for children

Conclusion: According to the findings, the implementation instructional program session will positively change children's nutritional status and dietary patterns. The difference between the two groups is related to the effectiveness of the dietary instruction program that was given to the study group parents but not to the control group parents.

Recommendation: Establishing an educational center for parents in the hospital with adequate materials, media, audio-visual aids, and booklets for educating all parents on how to deal with their children's eating behavior, pediatric nurses have more options for making information clear and easily understandable when communicating with parents and caregivers

Keywords: Instructional Program, Parents' Knowledge, Concerning Management, Picky Eating Behavior, Children under Five Years

INTRODUCTION

Picky eating is characterized by an unwillingness to eat familiar foods or to try new foods, as well as strong food preferences from birth infants have an innate preference for sweet and salty tastes and tend to reject sour and bitter tastes, while a savoury umami taste is more likely to evoke a neutral response. Feeding weaning starts many different tastes must be accepted if the child is to learn to eat a balanced diet. Fruits and some vegetables that are sweet can be readily accepted; however, vegetables often have bitter taste notes and fruits sometimes have sour ones, and these tastes tend to be rejected at first. Infants also need to learn how to cope with different textures of food as they develop the skills required for chewing and swallowing adult foods⁽¹⁾. Children who exhibit picky eating behaviors typically consume a limited variety of foods, eat small portions, skip meals, eat slowly, resist trying new foods, demonstrate strong food preferences, and/or show little interest in food. Often these behaviors are short-lived and present little reason for concern. However, many parents report picky eating behaviors as problematic and persisting longer than two years. In some cases, these behaviors may extend well beyond the toddler years. Consequently, for some children, picky eating behaviors have the potential to adversely affect dietary intake and quality, weight, normal growth, and future health outcomes⁽²⁾. The development of picky eating may be affected by factors such as pressure to eat, personality factors, and parental practices/ feeding styles, including parental control and social influences, as well as specific factors, such as the absence of exclusive breastfeeding, the introduction of complementary foods before 6 months, and the late introduction of chewy foods Picky eating, is a widely used existing research. Effects of picky eating behavior on nutrition of the child and factors contributing to development of picky eating behavior⁽³⁾. picky eaters' limited food repertoires can result in inadequate intakes of vitamins and minerals especially if they are reported to routinely reject many foods or consume small amounts

of food. Examinations of the relations between children's picky eating and weight status have revealed some cause for concern, whereby children who are picky eaters tend to have lower BMI than that of non-picky eaters⁽⁴⁾.

MATERIAL AND METHODS

Research design: The study was designed as a quasi-experimental design using a test-retest approach for the study and control groups

Setting: Teaching Hospital in Al-Najaf Al-Ashraf City, participants' parents' knowledge being tested in two periods pre-test, post-test-1

Instrument: Picky eating behavior questionnaires based on the internal consistency reliability/alpha Cronbach technique. The reliability was determined through the use of Microsoft excel/ correlation function; also, the result is supported through the use of the SPSS Program version 22 / Reliability Analysis. In addition, the reliability can be determined through the use of Pearson's Correlation Formula. Two levels of responses (correct and incorrect) with two levels of scoring are (1) for the correct answer and (0) for the incorrect answers. Therefore, the levels of parents' knowledge levels are: Poor (mean of scores 0-0.33).Fair (mean of scores 0.34-0.67).Good (mean of scores 0.68 and more).

RESULTS

The results of demographic characteristics shows that the highest percentage for categories was residency as 82.5% (n = 33) study group and (80%) (n = 32) in the control group with urban resident, the rural was 17.5% (n = 7) study group and 20% (n = 8) in control group. On the other hand, most participants are males 52.5% (n = 21) study group and the remaining 47.5. % (n = 19) are female, and the control group male 60% (n =24) and female 40% (n=16).17.5% (n = 7) 2 and less year old, 22.5% (n = 9) between 3- less than 4year old, 60% (n = 24) were 4 years and above in the

study group, 12.5% (n = 5) 2 and less year old, and 20% (n = 8) between 3 - 4 year old, 67.5% (n=27) were 4 years and above in the control group. Most child's order in the family are 1-2, 62.5% (n = 25), and 3-4, 17.5% (n= 7) and 20% (n = 8) the remaining 5 and more are the study group, and 1-2, 85. % (n = 34), and 3-4, 7.5% (n= 3) and 7.5% (n = 3) the remaining 5 and more are the control group.

Table 1: Study Sample Demographic Characteristics

Demographic Data	Rating and Intervals	Statistics	Groups		C.S
			Study	Control	
Residency	Urban	Freq. 33 % 82.5%	33	32	Binomial Distribution p-value (0.56) NS
	Rural	Freq. 7 % 17.5%	7	8	
Gender	Male	Freq. 21 % 52.5%	21	24	Binomial Distribution p-value (0.55) NS
	Female	Freq. 19 % 47.5%	19	16	
Child's Age / Years	2 and less	Freq. 7 % 17.5%	7	5	Chi-square value (27.00) d.f. (4) p-value (0.058) NS
	3-4	Freq. 9 % 22.5%	9	8	
	4-5	Freq. 24 % 60.0%	24	27	
Child's Order in the Family	1-2	Freq. 25 % 62.5%	25	34	Chi-square value (38.00) d.f. (4) p-value (0.06) NS
	3-4	Freq. 7 % 17.5%	7	3	
	5 and more	Freq. 8 % 20.0%	8	3	

%= percentage, freq. = frequency, χ^2 = chi-square value, p- value= probability value, NS= non-significance

Table 2: Distribution of the Clinical Characteristic for both Study and Control Groups

Clinical Data	Rating	Statistics	Groups	
			Study	Control
1-Does the child eat special food	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 3 % 100	3	6
2-Does the child have a medication allergy	Yes	Freq. 8 % 20	8	0
	No	Freq. 32 % 80	32	40
3-Does the child have a wheat allergy	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
4-Does the child have a bean allergy	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
5-Does the child have a blood allergy	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
6-Does a child have a chronic skin disease	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
7-Does the child have been malnourished	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
8-Does the child suffer from loss of appetite	Yes	Freq. 5 % 12	5	12
	No	Freq. 35 % 87	35	87
9-Does the child have chronic diabetes mellitus	Yes	Freq. 2 % 5	2	0
	No	Freq. 38 % 85	38	40

10-Does a child have autism spectrum disorders	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
11-Do brothers of the child have picky eating behavior	Yes	Freq. 0 % 0.0	0	0
	No	Freq. 40 % 100	40	40
12-Do you take your child to a dietitian	Yes	Freq. 5 % 12.5	5	0
	No	Freq. 35 % 87.5	35	40

%= percentage, freq. = frequency.

Table 3: Distribution of Family General Information for both Study and Control Groups

Information	Rating	Statistics	Groups	
			Study	Control
Monthly income / ID	Less than 300,000	Freq. 2 % 5.0%	2	0
	300,000-600,000	Freq. 38 % 95.0%	38	40
Father's levels of education	Read and write	Freq. 0 % 0.0%	0	7
	Primary school	Freq. 18 % 45.0%	18	9
	Intermediate school	Freq. 14 % 35.0%	14	13
	Secondary school	Freq. 4 % 10.0%	4	9
	College or institute	Freq. 2 % 5.0%	2	2
	Post-graduate	Freq. 2 % 5.0%	2	0
Mother's levels of education	Read and write	Freq. 7 % 17.5%	7	15
	Primary school	Freq. 9 % 22.5%	9	3
	Intermediate school	Freq. 9 % 22.5%	9	5
	Secondary school	Freq. 9 % 22.5%	9	7
	College or institute	Freq. 5 % 12.5%	5	8
	Post-graduate	Freq. 1 % 2.5%	1	2
Father's occupation	Employee	Freq. 33 % 82.5%	33	28
	Retired	Freq. 1 % 2.5%	1	5
	Jobless	Freq. 6 % 15.0%	6	7
Mother's occupation	Employee	Freq. 16 % 40.0%	16	24
	Retired	Freq. 0 % 0.0%	0	8
	Housewife	Freq. 24 % 60.0%	24	8
Nutritional problems	No	Freq. 40 % 100.0	40	40
Participation in a nutritional program	No	Freq. 40 % 100.0	40	40
Making a different food	No	Freq. 40 % 100.0	40	40

%= percentage, freq. = frequency.

Table (2) shows that most of the study sample responses to the clinical characteristic for both study and control groups were (1, 3, 4, 5, 6, 7, 10, 11) were No. The item (2) in the study group child have a medication allergy (20%) yes, and (80%) No. and No

(100%) in the control group. The item (8) child suffers from loss of appetite the response with yes were (12%) in the study and control groups. However, most participants' responses were "No" in the study and control groups. Based on the differences in frequency and percentage with "yes" answers of the item (8) in the study and control groups were (87%). The item (9) in the study group child have chronic diabetes mellitus (5%) yes. And (95%) No, and yes (100%) in the control group. The remaining 12 item number were "yes" 12.5% in the study group, and the control group 0%. Regarding "No" answer 87.5% in the study group, and in the control group 100%.

revealed that the 38 (95.0%) in the study group, while 40 (100%) in the control group. The most common father's levels of education were from a primary school (45%) and intermediate school (35%) for in the study group, and primary school, secondary school (22.5%) and intermediate school (32.5%) in the control group. The most common mother's levels of education were for all primary school, intermediate school and secondary school (22.5%) for in the study group, and read and write (37.5%) and college or institute (20%) in the control group. Concerning father's occupation 82.5% employees in the study group, and (70%) in the control group. Most common showed that mother occupation was from housewife and employee (60%) for each degree in the study and control group. The responses illustrate that there "No" (100%) was nutritional problems, participation in a nutritional program and making a different food in the study and control group.

Table (3) shows the distribution of general family information for both study and control groups of frequencies and percentages. Regarding monthly income ranged from 300,000-600,000,

Table 4: Assessment of Parents' Knowledge Concerning Management of Picky Eating Behavior in both Study and Control groups at the Pre-test

Main Studied Domains	Levels	Statistics	Groups			Overall Mean/ Assessment	Total
			Study	Control	Overall Mean/ Assessment		
Management of Picky Eating Behaviors	Poor	Freq.	34	110 Poor	36	.085 Poor	70
		%	85.0%		90.0%		87.5%
	Fair	Freq.	2		1		3
		%	5.0%		2.5%		3.8%
	Good	Freq.	4		3		7
		%	10.0%		7.5%		8.8%

Good (mean of score 0.68-1), fair (mean of scores 0.34-0.67), poor (mean of scores (0-0.33)

The results in a table (4) shows that overall assessment of Parents' knowledge concerning management of picky eating behavior for children poor in both study and control groups at the Pre-test.

Table 5: Assessment of Parents' Knowledge Concerning Management of Picky Eating Behavior in both Study and Control groups at the Post-test

Main Studied Domains	Levels	Statistics	Groups			Overall Mean/ Assessment	Total
			Study	Control	Overall Mean/ Assessment		
Management of Picky Eating Behaviors	Poor	Freq.	2	.896 Good	36	.102 Poor	38
		%	5.0%		90.0%		47.5%
	Fair	Freq.	2		1		3
		%	5.0%		2.5%		3.8%
	Good	Freq.	36		3		39
		%	90.0%		7.5%		48.8%

Good (mean of score 0.68-1), fair (mean of scores 0.34-0.67), poor (mean of scores (0-0.33)

The results in a table (4) shows that overall assessment of Parents' knowledge concerning management of picky eating behavior for children good in study group while the control groups was poor at the Post-test. This indicates an improvement in their parents' knowledge with picky eating behavior instructional program in dietary pattern.

Table 6: Mean Difference (Paired Sample t-test) between the Study Group participants' Knowledge throughout Two Periods of Measurements (pre-test and post-test)

Main Studied Domain	Periods of measurements	Mean	Std. Deviation	Std. Error Mean	t-value	d.f.	p-value
Management of Picky Eating Behaviors	Pre-test	.110	.270	.043	14.378	39	0.0001 HS
	Post-test	.896	.234	.037			

S.D. = stander deviation, d.f.=degree of freedom, p-value= probability, HS= high significance

This table show a highly significant difference in the Management of Picky Eating Behaviors at a p-value less than 0.01. statistical significance, the significant increase in the statistical mean in post-test compared to the pre-test (i.e., there is an improvement in the parents' level of knowledge following the application of instructional program on parents' knowledge toward patterns for children with picky eating behavior.

Table 7: Mean Difference (Paired Sample t-test) between the Control Group participants' Knowledge throughout Two Periods of Measurements (pre-test and post-test)

Main Studied Domain	Periods of measurements	Mean	Std. Deviation	Std. Error Mean	t-value	d.f.	p-value
Management of Picky Eating Behaviors	Pre-test	.085	.241	.038	1.616	39	.114 NS
	Post-test	.102	.242	.038			

S.D. = stander deviation, d.f.= degree of freedom, p-value= probability, NS= non significance

Table (7) shows the assessment of Management of Picky Eating Behaviors between the pre-test and post-test control group; there is no significant difference at P-value more than (0.05) among pre-test and post-test evaluation in the control group. This means there is improvement in the parents' knowledge after the program.

Table 8: Mean Difference (Independent Sample t-test) between the Study and Control Groups participants' Knowledge at the pre-test

Main Studied Domain	Periods of measurements	Mean	Std. Deviation	Std. Error Mean	t-value	d.f.	p-value
Management of Picky Eating Behaviors	Study	.110	.270	.043	.437	78	.663 NS
	Control	.085	.241	.038			

This table demonstrates statistically non-significant differences between the study and control groups in pre-test for domains in the Management of Picky Eating Behaviors.

Table 9: Mean Difference (Independent Sample t-test) between the Study and Control Groups participants' Knowledge at the post-test

Main Studied Domain	Periods of measurements	Mean	Std. Deviation	Std. Error Mean	t-value	d.f.	p-value
Management of Picky Eating Behaviors	Study	.896	.234	.037	14.920	78	0.0001 HS
	Control	.102	.242	.038			

Table (9) show a highly significant difference in the Management of Picky Eating Behaviors at a p-value less than 0.01. statistical significance, the significant increase in the statistical mean in post-test compared to the pre-test (i.e., there is an improvement in the parents' level of knowledge following the application of instructional program on parents' knowledge toward patterns for children with PE).

DISCUSSION

In terms of residence, the present study's findings indicate that most participants live in urban areas. Al-population most Najaf's live in urban regions rather than rural areas. As a result, the researcher saw more parents from urban areas than rural areas. The majority of children involved in the research lived in urban areas (5). The majority of the current research children were male, with 21 (52.5%) in the quasi-experimental group and 24 (60%) in the control group. showed that the majority of the studied sample was male (53.2%). According to the current research, male children made up roughly 52.5 % of the overall sample group (6). In a study of French toddlers, boys had stronger neophobia than girls regarding food fear. Another study indicated that 53.2% of the children were boys and 46.8% were girls, with 2470 children. The current study agreed with the study done in it found that the majority of the studied gender the male (53%). The current study found that the majority of children (60%) aged four years and older are picky eaters; this finding is consistent (7). previous research has shown that the prevalence of picky eating was relatively stable during early childhood, between 2.5 and 4.5 years (8). The incidence of picky eating was highest during early childhood, declining to deficient levels by six years of age. distribution of socio-demographic characteristics for both the study and control groups. The present results showed no significant difference between the control groups in the pretest and post-test for all control groups. There is no significant difference between pretest and post-test evaluations in the control group at P-values greater than (0.05).According to the study, mentioned no significant changes between participants' parents' Knowledge control groups pre and post-picky eating behavior (9). Picky eaters often restrict the kind and quantity of food they consume (primarily vegetables), have strong preferences for particular meals, and are unwilling to try new foods. After picking, parents must also learn how to prepare healthy meals or stimulate children's appetites and control their daily food consumption. As a result, the family's understanding must range from food selection to feeding adequate servings to her children. Parents who do not have the proper knowledge or who do it just half-heartedly will have supplied enough nutritional intake (10). The present research found no significant difference ($P > 0.05$) in the knowledge of the study and control groups before to the administration of the instructional program (pre-test), but a significant difference (P-value 0.01) was found between the two groups after the application of the instructional program Post-test (11).

CONCLUSION

According to the findings, the implementation instructional program session will positively change children's nutritional status and dietary patterns. The difference between the two groups is related to the effectiveness of the dietary instruction program that was

given to the study group parents but not to the control group parents.

Recommendation: Establishing an educational center for parents in the hospital with adequate materials, media, audio-visual aids, and booklets for educating all parents on how to deal with their children's eating behavior, pediatric nurses have more options for making information clear and easily understandable when communicating with parents and caregivers

Conflict of Interest: The researchers report no conflict of interest.

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Ethical Clearance: The permission to proceed this study was obtained from the ethical committee in the college of nursing at University of Baghdad.

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