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Research Article

History of Eating and Drinking Patterns of Children with Nephrotic Syndrome Associated with Parenting Style and Parental Knowledge

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Abstract

Background and Objective: The number of children with nephrotic syndrome has increased. Unhealthy eating patterns in children can cause serious health problems. The purpose of this study was to analyze the relationship between parental knowledge and parenting style in relation to children's eating and drinking patterns, particularly focusing on children with nephrotic syndrome. **Materials and Methods:** This was a correlational study with a cross-sectional approach. The population in this study totaled 204 mothers of children with nephrotic syndrome in both the outpatient unit and inpatient care. Through consecutive sampling, 115 respondents met the inclusion criteria. Data collection was conducted using the Parenting Styles and Dimensions Questionnaire-Short Form (PSDQ), a knowledge questionnaire and an examination of the children's diet. **Results:** The results showed that most children (40%) consumed fast food as often as 2-3x/week and that 14.7% of the children consumed fast food every day. As many as 26.9% of the children consumed energy drinks every day. **Conclusion:** Democratic parenting can be a good choice because it pays attention to and respects children's freedom but the freedom should not be absolute as the parents must provide understanding and guidance.

Key words: Children health, drinking, eating, energy drinks, nephrotic syndrome, parenting style

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Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

A healthy diet is closely related to the prevention and management of kidney disease, including nephrotic syndrome¹. Nephrotic syndrome is a disorder of the kidneys that causes the body to lose a considerable amount of protein through the urine². Nephrotic syndrome in children can occur due to inappropriate parenting and a lack of knowledge about good eating patterns². Parents tend to give their children the freedom to behave as they wish and let their children consume packaged foods and drinks every day³. Packaged drinks include phosphorus and sodium, which cannot be secreted by the body; consequently, they accumulate in the kidneys. In addition, food and beverage factors can affect the immune system of children. An unbalanced immune system caused by the chemicals that enter the body through food and drink can cause inflammation and damage to the filtration system of the kidneys⁴.

Nephrotic syndrome in children occurs mostly in the age range of 2-14 years⁵. In children younger than 2 years old, the more common type of nephrotic syndrome is congenital nephrotic syndrome, while in children over 14 years old, it is associated with secondary kidney disease⁶. The average incidence rate of nephrotic syndrome is 2-16.9 per 100,000 children world wide⁵. Kidney Disease Improving Global Outcomes (KDIGO) states that primary nephrotic syndrome accounts for 90% of the cases of nephrotic syndrome in children, with the remainder being secondary nephrotic syndrome. The prevalence rate for primary nephrotic syndrome starts at approximately 16,100,000 children⁷. In 2016, the prevalence rate in Indonesia was approximately 6 per 100,000 children under 14 years old. The ratio of boys to girls was 2:1 until the middle of the 20th century, although Nephrotic syndrome morbidity in children is still high and exceeds 50%⁸. The prevalence of nephrotic syndrome in children in Soetomo General Hospital Surabaya is increasing every year.

In 2015, the number of children with nephrotic syndrome at Dr. Soetomo General Hospital Surabaya totaled 193. In 2016, there were 173 patients; this number increased in 2017 to 204 patients, although there had been a decline in 2015-2016. The results of interviews conducted by researchers with 10 parents of children with nephrotic syndrome on September 4-5th, 2018, showed that none of the 10 parents knew about nephrotic syndrome, how it occurred and the foods and beverages that increase the risk of nephrotic syndrome in children. Eight parents said that they gave their children the freedom to eat foods containing artificial sweeteners and packaged drinks such as tea and milk in packs and sweetened

drinks. In addition, the parents also gave their children the freedom to choose which foods and drinks they would buy and consume. This was because their children would cry, get angry and beat their parents if their desires were not followed. As many as 7 parents said that before their children developed nephrotic syndrome, the children had consumed snacks and tea/milk in packs for 2-5 years. They consumed the equivalent of approximately 1-3 glasses of drinks in packs almost every day. Others drank from packs approximately 4-5 days a week. Parental knowledge is very important and is related to preventive behavior⁹. Parenting style and lack of knowledge about good eating patterns can cause various problems in children¹⁰. Nephrotic syndrome in children begins with the main clinical manifestation of proteinuria. Proteinuria will cause other clinical manifestations, such as edema, hypoalbuminemia and hypercholesterolemia. Research conducted by Turolo, *et al.*¹¹ showed that foods that contain many trans fatty acids (TFA), which are found in fatty foods such as margarine, fast food, potatoes, fried foods and various snack chips, such as potato chips, potato sticks or cheese balls, can trigger inflammation of the kidneys, disrupt fluid balance and can worsen the condition of patients with chronic kidney disease. Food and beverages that contain mercury can cause lesions and damage to the glomerular kidney¹².

The role of parents in their children's development is integral and one important aspect of parenting involves maintaining and improving children's health status¹³. Good knowledge and parenting improves parents' attitudes towards establishing better relationships with their children. Such attitudes can be seen in the way that parents pay attention to their children, provide them with both gifts and punishments and respond to their children's desires¹⁴. Parenting will affect their children's health¹⁵. Children with nephrotic syndrome need to receive more supervision and attention from their parents, including in the areas of eating and drinking. Children's eating and drinking patterns have been shown to be related to the incidence of nephrotic syndrome in children but research on the relationship of knowledge and parenting patterns to the eating and drinking patterns of children with nephrotic syndrome in Indonesia has not been widely conducted. The purpose of this study was to analyze the relationship between parents' knowledge and parenting patterns and the eating and drinking patterns of children with nephrotic syndrome.

MATERIALS AND METHODS

Research design: This study was correlational with a cross-sectional approach.

Study population: The population in this study was all of the mothers who had children diagnosed with nephrotic syndrome who were being treated at the nephrology pediatric ward and by the Pediatric Outpatient Department at Dr. Soetomo General Hospital, which totaled 204 respondents. We obtained 115 respondents who met the inclusion and exclusion criteria. The inclusion criteria for this study were as follows: (1) Mothers of children with nephrotic syndrome, including new patients or old patients and (2) Patients who were hospitalized or who were outpatients. The exclusion criteria were (1) Mothers who had mental disorders, (2) Mothers who could not read and/or write and (3) Mothers who were not cooperative throughout the research process. The sampling techniques used in this study were non probability and consecutive sampling. The independent variable was the knowledge and parenting style of the parents of children with nephrotic syndrome, while the dependent variable was the diet of the children with nephrotic syndrome.

Measurement: The knowledge questionnaire used in this study addressed nephrotic syndrome in children and consisted of 10 multiple choice questions. If the respondent answered the question correctly, then it received a score of 1 and if the respondent answered incorrectly, then it received a score of 0. The researcher created the following classification system for the level of knowledge based on the respondent's answers: good: $\geq 76\%$, adequate: 56-75% and poor: $\leq 55\%$. The results of the validity and reliability test for the knowledge questionnaire showed that all questions were valid and reliable, with a Cronbach's alpha value of 0.785.

Parenting style was measured using the modified Parenting Styles and Dimensions Questionnaire-Short Form (PSDQ)¹⁶. The instrument was modified to focus on parenting as it related to food and to parents' interest in their children. The assessment instrument consisted of 28 different statement items that were answered by either the father or the mother. Each item was assessed using a Likert scale with a value of 1 (never), 2 (rarely), 3 (sometimes), 4 (often) or 5 (always). Parenting was divided into 3 categories: democratic, permissive and authoritative. The results of the validity and reliability test of the PSDQ questionnaire indicated that all questions were valid and reliable, with a Cronbach's alpha value of 0.807.

The questionnaire used in this study to examine the food and drink consumption patterns in children with nephrotic syndrome consisted of 10 questions about foods and 10 questions about drinks. The questions about food

and drink consisted of 5 positive questions and 5 negative questions. The questions were answered via a Likert scale from never = 1, rarely (1x/week) = 2, sometimes (2-3x/week) = 3, often (4-5x/week) = 4 and always (every day/ $\geq 6x/week$) = 5 for the positive questions. Some of the negative questions were opposite scored. The results of the validity and reliability tests for the food and drink questionnaire showed that all of the questions were valid and reliable, with a Cronbach's alpha value of 0.827 for diet and a Cronbach's alpha value of 0.793 for drinking patterns.

Data collection: The initial process of data collection was performed by selecting the prospective respondents who met the inclusion criteria from the children's inpatient room as well as from the outpatient department section of pediatric nephrology. Before conducting the research, the researcher explained the purpose and benefits of the study while asking for approval from the prospective research respondents. The participants completed and signed the consent sheet as proof of their approval. After the respondent gave consent, the researcher distributed the research questionnaire. At the time of data collection, the researcher stayed with the respondent, so if there were respondents who did not understand the research questionnaire, they could immediately ask the researcher. The researcher asked for the help of 2 nursing colleagues to assist in collecting the research data. However, before the nurses participated, the researcher explained the technical details of the research. The researcher guaranteed the confidentiality of the respondents' identity and ensured that no other party other than the researcher would know information that the respondent wanted to be kept secret.

Ethical approval number: This research passed the ethical review and obtained Ethical Approval certificate No. 0864/KEPK/XII/2018 issued by the Health Research Ethics Committee of Dr. Soetomo General Hospital Surabaya.

Analysis: The statistical analysis consisted of two stages, namely, descriptive and inferential analysis. The descriptive analysis included the mean, median and standard deviation. The inferential analysis used Spearman's rho and chi square test statistics to determine the relationship between the independent and dependent variables. The confidence interval was 95% with alpha (α) = 5% or 0.05. The results of the statistical test (p-value) were not equal to $\alpha = 0.05$. The strength of the relationship was expressed as $^{\circ} 0.8-1 =$ very strong, $0.6-0.799 =$ strong, $0.4-0.599 =$ moderate, $0.2-0.399 =$ weak and $0.0-0.190 =$ very weak.

RESULTS

Subject characteristics: The majority of the mothers in this study were aged 36-45 years (late adulthood). The age of the youngest respondent was 24 years and the oldest respondent was 48 years old. The majority of children who experienced nephrotic syndrome were 6-11 years old (childhood). The majority of the respondents had children who had long-standing nephrotic syndrome for 1-3 years. In this study, most of the respondents worked as homemakers or in the private sector. For the majority of the mothers, the highest level of education was high school and the majority had 2 children. The majority of the children with nephrotic syndrome in this study were the oldest child in the family. The income of the majority of the parents was more than 3,550,000 rupiahs and the majority of the respondents lived in rural areas (Table 1).

Descriptive data: Knowledge about nephrotic syndrome in children was lacking in the majority of the mothers and the majority of the parents used an authoritarian parenting style. The diet of the majority of the children was not good. The mean knowledge value was 5.77, the median was 6, the standard deviation was 1.779, the minimum value was 1 and the maximum value was 10. For parenting, the mean value was 84.04, the median was 59.4, the standard deviation was 11.688, the minimum value was 68 and the maximum value was 121. For drinking patterns, the mean was 59.4, the median was 55, the standard deviation was 11.615, the minimum value was 40 and the maximum value was 87 (Table 2).

The majority of the mothers did not know what constituted a good and appropriate diet for children, nor did they know the factors that influence parents' decisions regarding their children's diet and the right amount of food for children. The majority of the parents had good knowledge about balanced nutrition for children aged 0-6 months, the types of drinks that cause nephrotic syndrome and the types of foods that cause nephrotic syndrome.

Eating patterns: The majority of the children liked to eat healthy foods at home (rice, vegetables, side dishes, milk) but there were also children who liked to eat foods containing sweeteners (jelly, gelatin, etc.) and fast foods, such as instant noodles. The children ate green vegetables and foods with

Table 1: Subject characteristics (n = 115)

Characteristic	Frequency	Percentage
Mother's age (years)		
17-25 (late adolescence)	3	2.6
26-35 (early adult)	30	26.1
36-45 (late adult)	72	62.6
46-55 (early elderly)	10	8.7
Children age (years)		
0-5 (under five years)	17	14.8
6-11 (school age)	55	47.8
12-16 (early adolescence)	43	37.4
Period since diagnosis (years)		
1-3	65	56.5
4-6	33	28.7
7-10	17	14.8
Mother's occupancy		
Labor	4	3.5
Homemaker	67	58.3
Entrepreneur	39	33.9
Civil servant	5	4.3
Mother's level of education		
Elementary school	20	17.4
Junior high school	41	35.7
Senior high school	45	39.1
Bachelor's degree	9	7.8
No. of children		
1	29	25.2
2	51	44.3
3	32	27.8
8	3	2.6
Birth order of participating child		
1	69	60.0
2	25	21.7
3	18	15.7
5	3	2.6
Parents' salary		
>Regional minimum wage	53	46.1
≤Regional minimum wage	62	53.9
Residence		
Rural	62	53.9
Urban	53	46.1

Table 2: Descriptive data for knowledge, parenting style and feeding pattern (n = 115)

Category	Frequency	Percentage	Mean	Median	SD	Minimum	Maximum
Knowledge							
Good	16	13.9	5.77	6.0	1.779	1	10
Moderate	45	39.1					
Low	54	47.0					
Parenting style							
Authoritative	19	16.5	84.04	59.4	11.688	68	121
Authoritarian	89	77.4					
Permissive	7	6.1					
Feeding pattern							
Good	32	27.8	59.4	55.0	11.615	40	87
Poor	83	72.2					

Table 3: History of eating patterns among children with nephrotic syndrome (n = 115)

Questions	0		1x		2-3x		4-5x		>6x	
	f	%	f	%	f	%	f	%	f	%
Eating fast foods, such as instant noodles	3	2.6	29	25.5	46	40.0	20	17.3	17	14.7
Eating healthy food at home (rice, vegetables, side dishes, milk)	0	0.0	0	0.0	50	43.4	42	36.5	23	20.0
Eating foods with natural sweeteners, such as sugar (gelatin with sugar)	8	6.9	23	20.0	52	45.2	26	22.6	6	5.2
Eating green vegetables	3	2.6	36	31.3	41	35.6	21	18.2	14	12.1
Eating snacks / foods from packages	15	13.1	53	46.1	21	18.2	17	14.7	9	7.8
Eating foods that contain large amounts of MSG (meatballs, cireng, sausages, etc.)	9	7.8	48	41.7	29	25.2	18	11.6	11	7.8
Eating fruits	0	0.0	51	44.3	37	32.1	20	17.3	7	6.0
Eating fried foods	11	9.5	44	38.2	39	33.9	17	14.7	4	3.4
Eating foods that contain artificial coloring, such as sauces	0	0.0	44	38.2	39	33.9	15	13.0	17	14.7
Eating foods with artificial sweeteners (jelly, gelatin, etc.)	0	0.0	27	23.4	45	39.1	35	30.4	8	6.9

f: Frequency, %: Percentage

Table 4: Drinking patterns of children with nephrotic syndrome (n = 115)

Questions	0		1x		2-3x		4-5x		>6x	
	f	%	f	%	f	%	f	%	f	%
Drinking 6-8 glasses of water per day	0	0.0	12	10.4	41	35.6	38	33.0	24	20.8
Drinking beverages with artificial sweeteners	0	0.0	36	31.3	41	35.6	21	18.2	17	14.7
Drinking beverages with artificial coloring	0	0.0	35	30.4	45	39.1	14	12.1	21	18.2
Drinking fruit juice	0	0.0	51	44.3	47	40.8	17	14.7	0	0.0
Drinking energy drinks	2	1.7	1	0.8	29	25.2	52	45.2	31	26.9
Drinking formula milk	5	4.3	30	26.0	55	47.8	22	19.1	3	2.6
Drinking coffee from a package	1	0.8	7	6.0	57	49.5	20	17.3	30	26.0
Drinking tea from a package	23	20.0	53	46.0	22	19.1	13	11.3	4	3.4
Drinking beverage sachets with various flavors	27	23.4	54	46.9	22	19.1	2	1.7	10	8.6
Drinking fermented milk, such as yogurt	56	48.6	51	44.3	8	6.9	0	0.0	0	0.0

f: Frequency, %: Percentage

Table 5: Parent's knowledge and history of eating patterns for children with nephrotic syndrome

Knowledge	Eating pattern				Total	p-value	r	95% C.I.	
	Good		Low					Lower	Upper
	f	%	f	%					
Good	8	7.0	8	7.0	16	13.9	0.057	0.451	
Moderate	18	15.7	27	23.5	45	39.1			
Low	6	5.2	48	41.7	54	47.0			

f: frequency, %: Percentage, Significance at level p<0.05

sweeteners (jelly, gelatin, etc.) 2-3 times per week. The majority of the children consumed snacks and/or packaged foods, foods that contain large amounts of MSG (meatballs, sausages, etc.), fruits, fried foods and foods that contain dyes, such as sauces, once per week. There were also 3 children who did not eat vegetables at all (Table 3).

Drinking patterns: The majority of the children liked to consume energy drinks, in addition to consuming 6-8 glasses of water per day and drinking milk. The majority of the children consumed drinks with sweeteners, drinks with coloring, formula milk and coffee in packs up to 2-3 times a week. The children consumed fruit juice, packaged tea, mixed sachets of various flavors and fermented milk, such as yogurt, once a week. The majority of the children consumed energy drinks as often as 4-5 times a week (Table 4).

The correlation between the mothers' knowledge and the dietary patterns of children with nephrotic syndrome: The majority of the respondents had an insufficient level of knowledge and children with a poor diet. Even among the respondents with a good knowledge level, their children's eating patterns were not good. The data also showed a lack of knowledge among those respondents whose children's diets were good. The results of the statistical tests using Spearman's rank correlation showed a significant relationship ($p = 0.005$) between knowledge and the diet of children with nephrotic syndrome. The results of the statistical tests showed a weak level of correlation ($r = 0.258$) and a positive correlation coefficient (Table 5).

The correlation between parenting style and dietary patterns: Out the 89 respondents who indicated an

Table 6: Parenting style and eating pattern history of children with nephrotic syndrome

Parenting style	Eating pattern				Total		p-value	r	95% C.I.	
	Good		Low		f	%			Lower	Upper
	f	%	f	%						
Authoritative	11	9.5	8	7.0	19	16.5	0.005	0.288	0.094	0.454
Authoritarian	19	16.5	70	60.9	89	77.4				
Permissive	2	1.7	5	4.3	7	6.1				
Total	32	27.8	83	72.2	115	100.0				

f: frequency, %: Percentage, Significance at level $p < 0.05$

authoritarian parenting style, 70 reported a poor dietary pattern. Of those who reported permissive parenting, 5 out of 7 reported a poor diet. Among the mothers with a democratic parenting style, 11 out of 19 reported a good diet. The results of the statistical test using chi square showed a very significant relationship ($p = 0.005$) between authoritarian parenting and diet in children with nephrotic syndrome. The statistical test results also showed a weak correlation level ($r = 0.288$) and a positive correlation coefficient (Table 6).

DISCUSSION

The respondents in this study were mothers with children diagnosed with nephrotic syndrome. The majority of the respondents were mothers of a productive age who were included in the final adult category, namely, in the age range of 36-45 years. From the distribution of the data of the respondents, it is known that the majority of the mothers were 30 years old, 40 years old or 41 years old. The youngest mother was 24 years old and the oldest was 48 years old. The age of the majority of children with nephrotic syndrome was 6-11 years, which is still in the period of childhood. This is consistent with reports that nephrotic syndrome in children occurs most frequently in the age range of 2-14 years⁵. The youngest child with nephrotic syndrome in this study was 3 years old and the oldest was 16 years old.

In this study, the majority of the children had nephrotic syndrome for 1-3 years and the longest duration was 10 years. The majority of the respondents in this study were mothers who did not work or were homemakers. The majority had a high school education. The homemakers' insufficient knowledge about good parenting was reflected in their attitude that parents are always right and that children must follow their parents' every wish. The research data showed that the majority of the parents were authoritarian.

The majority of the respondents had 2 children and the children with nephrotic syndrome were most often the first-born. The majority of the respondents' income was below the minimum wage, which is less than 3,550,000 rupiah. It is

possible that the parents may not be able to buy healthy food or snacks for their children. The level of food consumption can be influenced by the price of the food products obtained. A high level of income will determine the purchasing power of the parents and both the quality and quantity of the family's food. Conversely, a low income will reduce a person's purchasing power for food products¹⁷.

The majority of the respondents lived in the countryside or on the outskirts of Surabaya. This results in less exposure to information about foods and beverages that are good for children. The mother's education regarding meeting children's nutritional needs determines the nutritional status of the children. This has an effect on the selection of food ingredients and the fulfillment of nutritional needs. People with higher levels of education tend to balance the food intake and nutritional needs of the child. For someone who has a low level of education, the important factor in fulfilling nutritional needs is whether a food is filling. The education that parents obtain provides knowledge about the nutrition and risk factors that affect potential nutritional problems in children¹⁷.

The results of the analysis using the Spearman rho correlation statistical test showed that there was a very significant relationship between the knowledge of the respondents and the diets of the children with nephrotic syndrome. The correlation coefficient indicated a weak relationship, so it can be concluded that there is a dependent interaction between the knowledge of the respondents and the diets of the children with nephrotic syndrome.

Regarding the results of the distribution, the majority of the respondents had an insufficient level of knowledge and fed their children an inappropriate diet. The lack of a proper diet in children can be caused by several factors, including a lack of knowledge. Parents' knowledge about meeting their children's nutritional needs determines the children's nutritional status. Knowledge has an effect on the selection of food ingredients and the fulfillment of nutritional needs. People with a higher level of education tend to choose and balance their foods to meet their children's nutritional needs. For people with low education, the important factor in the

context of fulfilling nutritional needs is that the food is filling. Educational attainment provides knowledge about the nutrition and risk factors that can affect and cause nutritional problems in children¹⁷. Education can affect a person's behaviors regarding their lifestyle, especially by motivating them to play a role in their children's lives and to provide proper parenting¹⁸. In general, the higher the education level, the easier it is for an individual to obtain information.

Age also influences the knowledge process. The average age of the respondents in the productive age range was 36-45 years. There is a relationship between age and the level of human productivity¹⁹. An individual's age affects their ability to obtain information and the his or her mindset regarding the information provided²⁰. The older someone gets, the more the ability to obtain information and alter one's mindset decreases. A person's ability to receive the information that he or she is given is related to the maturity of the body's functions, which pertains to the person's senses, brain and health. The age of the parents in the final adult category often aligns with parents not understanding the dangers of the food consumed by their children. They tend to choose to humor their children and buy snacks, prompting the children to become demanding and particular.

The distribution data showed that most of the respondents had an income level below the regional minimum wage (RMW). Economic factors can affect consumption levels based on an individual's income and the price of the food products obtained. A high income will determine the purchasing power related to the quality and quantity of food. Conversely, a low income will reduce a person's purchasing power in regard to food products²¹. Parents with a low income have reduced purchasing power related to healthy food. The majority of children like to eat snacks from stalls near their homes that are inexpensive and savory.

Mothers' behavior is strongly related to the proper feeding of children²². Data on the distribution of parental knowledge showed that parents do not often know what is a good and appropriate diet for their children. The parents also do not know about the factors that affect their children in terms of the application of a good diet and the right amount of food. However, the majority of parents know about the importance of balanced nutrition for children aged 0-6 months, the types of drinks that can cause nephrotic syndrome and the types of foods that can cause nephrotic syndrome.

The knowledge distribution data showed that many parents still do not know about the good and appropriate eating patterns in children. This lack of knowledge can be

caused by the unavailability of standard and appropriate information regarding what is a good and proper diet. The data also showed that the parents do not know how to ensure that their children follow a healthy diet and eat right, possibly due to the different eating patterns of each child. Children can have different eating schedules and their parents should follow their eating patterns and schedules. The distribution data showed that the parents knew the most about the importance of balanced nutrition for children aged 0-6 months because they had received information about it.

The respondents also learned information from their neighbors and relatives regarding what constitutes good food for children aged 0-6 months. The respondents also often know about the importance of exclusive breastfeeding for children aged 0-6 months. Most respondents also knew about the types of food and drinks that cause nephrotic syndrome. The respondents could be easily exposed to information on the foods and beverages that are good for health and on those that can cause harm to their children.

Incorrect knowledge about diet will have a negative impact. The body needs a minimum amount of certain nutrients, consisting of carbohydrates, proteins, fats, vitamins and minerals. Each food contains certain nutrients that differ in levels from those in other foods, while the body needs a certain base amount of nutrients to operate. The nutritional levels in food must be balanced and in accordance with the nutrients needed by the body. Nutrients that enter the body must not be either lacking or excessive²³.

For parents who do not know about the appropriate eating patterns for children, this lack of knowledge could be caused by the educational backgrounds of the parents and application of the parents' particular parenting style to their children in terms of diet and environmental factors. The environment can also influence parenting style and the selection of the child's diet. Research conducted by Sarika²⁴ revealed that parents have a below-average level of knowledge and poor practices regarding feeding for children with nephrotic syndrome.

The distribution data also showed that there were respondents who had good knowledge but whose children's diets were still not good. One such respondent was respondent no. 98, aged 46 years, in the early elderly category. Respondent no. 98 had a child aged 6 years who had suffered from nephrotic syndrome for 2 years. The respondent was a homemaker with 3 children and the one with nephrotic syndrome was the first child. The family had an income above the RMW. The parenting style data indicated that the respondent applied authoritarian parenting. The respondent had good knowledge about nephrotic syndrome. The

respondent was in the elderly category when she had her children. The respondent was strict with her children, who had to obey every word and regulation given by their parents.

The next respondent was respondent No. 111. The respondent was 37 years old, in the late adulthood category, with a child aged 11 years old. The child had suffered from nephrotic syndrome for 2 years. The respondent was a homemaker with a high school education and she had 3 children. The oldest child had nephrotic syndrome. The respondent had an income below the RMW and had good knowledge of nephrotic syndrome. The parenting style evaluation indicated that the respondent applied authoritarian parenting to her children. Parents who are not close to their children behave in an authoritarian manner and all decisions are made by the parents. The impact of authoritarian parenting can cause children to curb themselves in response to the rules that have been applied by the parents and the children can experience a decrease in self-esteem and a lack of confidence due to the regulations.

Research conducted by Kakinami *et al.*²⁵ showed that parents with an authoritarian parenting style in terms of a child's diet can cause the child to become obese. Parents with an authoritarian parenting style can also cause eating disorders in their children, causing the children to experience a decrease in appetite and weight loss²⁶.

The distribution data from the two respondents above showed that their children with nephrotic syndrome were still in childhood (6-11 years). This is in accordance with the statement from Zolotas *et al.*⁵ that nephrotic syndrome in children most often occurs within the age range of 2-14 years. Additionally, both parents of these respondents had good knowledge regarding nephrotic syndrome. The parents' good knowledge about nephrotic syndrome caused them adopt authoritarian parenting with the intention that the child eat good food. The development of nephrotic syndrome in these children can be caused by the children eating snacks at school or when outside the home without the knowledge of their parents.

The results of the analysis using the Spearman rho correlation showed that there was a significant relationship between parenting and diet in children with nephrotic syndrome. Parenting style describes how the parents treat their children in terms of education, guidance and discipline²⁷. It can also include parents protecting their children when they are going through maturity processes, which are the efforts to understand and meet the norms expected by society in general. Parents are expected pay attention to the parenting style that they are applying to their children and they must always supervise their children's eating and drinking patterns.

The factors that influence parenting style include the social setting and physical environment in which the family lives. The pattern involved in nurturing a family is also influenced by the social status of the area where the family lives. If the family lives in an environment with a low education level and poor social skills, then the children can also easily become affected. The parents in this study indicated that their model of parenting was obtained from their own parents. This is reinforced if they see the parenting style as successful. Additionally, when the parent's work environment is too busy, parents tend to place their children in the care of the people closest to them or even baby-sitters.

The pattern of care applied to the child also depends on the person who cares for the child. From the description above, it can be seen that the factors that influence parenting style are both internal (originating from within the individual) and external (originating from the outside). Both internal and external factors determine the upbringing of the children in accordance with the applicable norms.

The most applied parenting style was authoritarian. Authoritarian parenting style is linked with unhealthy children¹⁰. This style causes less-favorable eating patterns in children. Authoritarian parenting is parent-centered, meaning that all of the words and wishes of the parents are used as a benchmark (rule) that must be followed by their children²⁸. To ensure that their children are obedient, parents do not hesitate to apply harsh penalties.

The data distribution indicate that authoritarian parenting is not always correlated with a good diet; instead, children who are raised in an atmosphere of authoritarian parenting will be hesitant, have a weak personality and will be unable to make their own decisions about anything. However, even when the child is obedient, the parents will not reward them because the parents assume that their children are obligated to behave as the parents wish. In this case, the freedom of the child is very limited and whatever the child does must be in accordance with the wishes of the parents.

An authoritarian parenting style is often negatively linked to children's food intake²⁹. Parents who raise their children using authoritarian parenting have a poor impact on the child's development. Their children may also continue to disobey them and lie. Quietly and without the knowledge of their parents, children may consume their preferred foods and drinks at school or at a stall outside of the home.

The distribution data also showed that some of the respondents with authoritarian parenting had children with a good diet. Authoritarian parenting usually means that the children are not given the freedom to do something that they want. Parents who apply this form of parenting will have strict

rules that their children must not argue with. The way that the parents educate their children is also affected by parenting style. The parents think that their methods are stable and unchanging and so they often do not like the actions of children who protest, criticize or refute their rules²⁷.

Usually, parents are encouraged to apply authoritarian parenting because their parents used the same parenting style with them. Authoritarian parenting may also be adopted because the parents want their children to be the best and do not want their children to be defeated by anyone else. Although authoritarian parenting has more negative effects, it also has a positive impact, namely, that the children will be disciplined because the parents are assertive. The children will adhere better to the directions of their parents, such as not being allowed to consume arbitrary snacks at school.

Respondent No. 8 was a 38 year-old woman with a 15 year-old child. The respondent's child had nephrotic syndrome for 10 years. The respondent did not work and was a homemaker with an elementary education background. The respondent only had one child who suffered from nephrotic syndrome. The respondent had an income below the RMW and lived in a rural area. The respondent had a good level of knowledge about nephrotic syndrome and applied authoritarian parenting, which resulted in a good diet for their child. The respondent applied authoritarian parenting because she wanted to provide the best that she could for her child. Consequently, she placed restrictions on her child and required the child to obey everything she said. The respondent's child had nephrotic syndrome, which could have been caused by the child eating food without the knowledge of his or her parents, or the child could have had kidney problems since childhood.

The distribution data showed that most parents adopted a democratic parenting style when it came to educating and raising their children. Most parents who used a democratic parenting style had children with a good diet. This parenting style gives children the freedom to express their opinions and to do what they want so long as it does not cross the boundaries or break the rules set by the parents. This parenting style is marked by an attitude of openness between parents and their children. They agree upon rules together. The children are given the freedom to express their opinions, feelings and desires. In this parenting style, there is good communication between the parents and their children.

Democratic parenting enables children to develop control of their own behavior in a way that is acceptable by society. This encourages children to be able to stand alone, be responsible and be confident. The power of creativity develops well because the parents always encourage the

children to take initiative. With democratic parenting, children will be able to accept criticism from others, respect others, have a high level of self-confidence and be responsible for their own social life¹⁰.

The distribution data showed that the application of a democratic parenting style was correlated with a good diet. This can be seen in respondent No. 18. The respondent was 41 years old, in the late adulthood category. She was a homemaker with a junior high school level of education. The respondent had 2 children and the second child suffered from nephrotic syndrome. The child was 15 years old and had nephrotic syndrome for 5 years. The respondent applied democratic parenting. A democratic upbringing is very important. The result of the study by Landry²⁸ indicated that democratic parenting is a combination of permissive and authoritarian parenting, with the aim of balancing thoughts, attitudes and actions between children and parents. Democratic parenting is a form of parenting that pays attention to and respects children's freedom but the freedom is not absolute, as the parents provide understanding guidance of their children.

The use of a democratic parenting style creates closeness between parents and their children, which allows both to be more open and able to discuss the types of food and drinks that can be consumed to be healthy. The researcher expects that in the future, parents will adopt democratic parenting to improve their children's development and encourage a good relationship between the parents and their children.

The data shows that for some respondents who adopted a democratic pattern of parenting, their children's diet was still lacking. One such parent was respondent No. 1, aged 31 years, in the early adulthood category. The respondent was a homemaker with an elementary level of education and an income that was below minimum wage. The respondent only had 1 child, a 9 year-old who had suffered from nephrotic syndrome for 7 years. The respondents applied democratic parenting.

The distribution of the data indicated that the majority of the respondents applied permissive parenting, which was associated with a poor diet. This can be seen in respondent no. 29. The respondent was 46 years old. She worked as a private employee and had a high school level of education. The respondent had an income above the minimum wage and had 2 children. The child who had nephrotic syndrome was the second child; this child 13 years old and had nephrotic syndrome for 6 years. The respondent indicated a permissive parenting style.

Permissive parenting may reflect that the parents feel unconcerned, which prompts them to allow a wide range of opportunities and freedoms for their children²⁸. Permissive

parents allow their children to do anything. Parents let the children be free to behave according to their own desires. The parents show warmth and accept the children for who they are. This warmth tends to spoil the children. Permissive parents are too soft and helpless; they give their children freedom without showing them the norms that they must follow. This may be because the parents are very affectionate toward their children or because their own parents were lacking in knowledge.

The respondents applied permissive parenting by giving their children the freedom to consume the foods and drinks that they liked. This may have been because the parents worked as laborers and had a low level of education; consequently, the respondents could not control their children's diet. Nephrotic syndrome can last a long time and is associated with glomerular damage to the kidneys due to the unhealthy foods consumed. This phenomenon can be observed in children aged 13 years who have experienced nephrotic syndrome for six years.

The food distribution data showed that the majority of the children ate fast food, such as instant noodles, despite eating healthy at home (rice, vegetables, side dishes, milk). Their diets also included foods with natural sweeteners, such as sugar (gelatin with sugar sweetener); green vegetables and foods with artificial sweeteners (jelly, gelatin, etc.) 2-3 times per week. The majority of the children consumed snacks/packaged foods, in addition to foods that contain a large amount of MSG (monosodium glutamate) (meatballs, sausages, etc.), fruits, fried foods and foods that contain dyes, such as sauces, once a week. There were 3 children who did not consume vegetables at all. Vegetables are very important for the body as they contain many nutrients and large amounts of fiber³⁰.

The drinking distribution data showed that the majority of the children consumed 6-8 glasses of water per day and consumed drinks with artificial sweeteners and/or artificial coloring, formula milk and coffee packs as often as 2-3 times a week. The children consumed fruit juice, packaged tea, mixed sachets of various flavors and fermented milk, such as yogurt, once a week. The majority of the children consumed energy drinks as often as 4-5 times a week.

Distribution of data regarding the types of food most favored by the children showed that the majority of children liked to eat healthy foods made at home, such as rice, vegetables and side dishes. However, the children also liked to eat foods with artificial sweeteners, such as jellies and agar. The children also liked to eat fast food, such as instant noodles. The latter types of food are not healthy for children. Fast food and its packaging involves the use of food preservatives such as formalin, which is dangerous because it

can cause burns upon contact with the skin and irritation of the respiratory tract; additionally, if inhaled in high concentrations, it can cause an allergic reaction and cancer. If the formalin content in the body is high, chemical reactions will occur in the cells. This suppresses cell function and causes cell death, which leads to damage to the bodily organs. The effects on health if used for long and repeated periods can include watery eyes; digestive, liver, kidney and pancreatic problems; and cancer. Foods containing preservatives include meatballs, tofu, salted fish, etc.²³.

The distribution data for the types of drinks consumed indicated that the majority of the children like to consume energy drinks. Such drinks should only be consumed by adults. In addition, the children liked to drink as many as 6-8 glasses of water per day but they also liked to drink drinks with artificial ingredients. Packaged drinks include phosphorus and sodium, which cannot be secreted by the body; consequently, they are accumulated in the kidneys. In addition, food and beverage factors can affect the immune system in children. An unbalanced immune system caused by the chemicals that enter the body through eating and drinking can cause inflammation and damage to the filtration system of the kidneys⁴. Research conducted by Savage³¹ mentioned that parents use responsive parenting to calm their fussy children. For example, the parents will provide a type of food that the children like so the children will not cry.

CONCLUSION

The parents' lack of knowledge regarding nephrotic syndrome in children was related to the children's poor eating patterns, which can cause nephrotic syndrome. Good knowledge of nephrotic syndrome can prevent nephrotic syndrome in children through proper dietary regulation. An authoritarian parenting style is related to a poor diet that can cause nephrotic syndrome. Democratic parenting can be a good choice because it pays attention to and respects children's freedom without allowing absolute freedom, thereby enabling the parents to provide understanding and guidance to their children.

SIGNIFICANCE STATEMENT

This study discovered that there are a small proportion of children with nephrotic syndrome who have a history of eating fast food every day and some consume fast food 2-3 times a week. Lack of knowledge and an authoritarian parenting style are associated with the eating and drinking history of children with nephrotic syndrome. Low knowledge about healthy nutrition causes parents to adopt diet and

parenting patterns that are inappropriate. This study will help the researcher and nurses to provide the proper health education for parents in order to improve the health behavior especially in children feeding pattern.

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