

Mother's Care for Children with Nephritic Syndrome at Home

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Abstract

Background: The mother engages to develop a comprehensive care plan specific to the needs of the child with nephrotic syndrome. The mother seeks to understand the child with respect to health status, abilities, and priorities. **Aim:** This study aim was to a assess mother's care for children with nephrotic syndrome at home. **Design:** Descriptive research design was utilized in this study. **Setting:** The urologic pediatric outpatient clinic in Pediatric Ain Shams university hospital. **Sample:** a purposive sample of school age children equal 100 children. **Tool:** interviewing questionnaire consisted of children and caregivers socio-demographic characteristic, child's past and present medical history, caregivers' knowledge and practice about nephrotic syndrome. **Results:** more than one third of the mothers of children with nephrotic syndrome have unsatisfactory knowledge level and the vast majority of them not done correctly care to their children. Also, there were statistically significant differences between mothers' knowledge and demographic characteristics of the mothers except occupation and their residence. **Conclusion:** the mothers of nephrotic child had poor caring for their children with no statistically significant differences between mothers' care and demographic characteristics of the mothers except number of children in the family and their residence; also there was strong positive correlation between mothers' knowledge and their practice. **Recommendation:** conducting educational classes for the mothers and their children about nephrotic syndrome especially newly diagnosed patients at urology pediatric outpatient clinic.

Key words: Mother's Care, Children Health Problems, Home, Nephritic Syndrome.

Introduction

Nephrotic syndrome is a syndrome comprising signs of nephrosis

, chiefly protein in the urine, low blood albumin levels, and swelling. It is a component of glomerulonephrosis, in which different degrees of protein in the

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urine occur. Essentially, loss of protein through the kidneys leads to low protein levels in the blood including low albumin, which causes water to be drawn into soft tissues (Chen, 2010).

Nephrotic syndrome has many causes and may either be the result of a glomerular disease that can be either limited to the kidney, called primary nephrotic syndrome (primary glomerulonephrosis), or a condition that affects the kidney and other parts of the body, called secondary nephrotic syndrome (Pereira, et al., 2014).

The most common sign is excess fluid in the body due to the serum hypoalbuminemia. Lower serum oncotic pressure causes fluid to accumulate in the interstitial tissues. Sodium and water retention aggravates the edema. This may take several forms: puffiness around the eyes, characteristically in the morning, pitting edema over the legs, fluid in the pleural cavity causing pleural effusion (Lane and Langman, 2015).

Mother have a critical role in providing emotional support to their child and should be prepared and encouraged to participate in normal routines (such as feeding, bathing, playing, reading stories, cuddling) while the child is hospitalized. Rooming-in should be encouraged when possible, especially for younger children,

to reduce the stress of separation. Mother can learn to support their children by coaching them through procedures using refocusing and relaxation techniques (Kaba and Moreau, 2010).

Mother of children with nephrotic syndrome are often required to deliver home-based interventions including feeding. They must continuously monitor their child's health, advocate for appropriate health care, be prepared for episodes of infection and other life threatening complications, attend frequent hospital appointments and convey information to health care professionals, mother, relatives and teachers. The ability of mother to manage care can affect the child's personal development and medical management (Priya and Ellis, 2015).

The nurse engages the nursing process to develop a comprehensive care plan specific to the needs of the child. The nurse seeks to understand the individual with respect to health status, abilities, and priorities. The nursing process begins with holistic assessment of the child's physical and psychosocial health. The nurse interprets these cumulative data to identify diagnoses and expected outcomes. The nurse works together with the child, mother, and other health care providers to coordinate and implement the child's plan of care. A child's experience is dynamic, making ongoing evaluation vital to providing

timely and appropriate nursing care (Jerome, 2011 and Wong , 2013).

Significance of the study

Total number of children attended the pediatric urology clinic of Ain Shams University Hospital and the pediatric conservative urology clinic of the pediatric dialysis unit at Ain Shams University Hospital in 2014 were 2397 children .They were divided into 2047 children attended pediatric urology clinic ,and 350children attended pediatric conservative urology clinic chronic kidney disease (**Pediatric Hospital Statistical office, 2014**).

The quantity of parental information concerning symptoms of Nephrotic syndrome disease recurrence is insufficient. Therefore upgrading parental awareness and knowledge through educational courses and providing comprehensive and necessary information concerning disease, signs and symptoms, and prevention of its complications can greatly improve the quality of the cares levels and to live healthy as well as productive life. So, the researcher is motivated to provide education through information booklet regarding home care management of Nephrotic syndrome (**Jerome& Craig, 2013**).

Aim of the study

The aim of this study was to assess mother's care for children with nephrotic

s yndrome at home through:

1. Assessing the mother's knowledge about nephrotic syndrome.
2. Assessing the mother's practices towards care for their children with nephrotic syndrome.

Research Question

1. Is there a relation between mother's knowledge about nephrotic syndrome and their socio demographic characteristics?
2. Is there a relation between mother's practices towards care for their children with nephrotic syndrome and their socio demographic characteristics?
3. Is there a relation between mother's knowledge and practice towards care for their children with nephrotic syndrome?

Subjects and Methods

Research design:

A descriptive research design was utilized in this study to fulfill the study aim.

Setting:

The study was conducted at urologic pediatric outpatient clinic in

Pediatric Ain Shams university hospital which is a specific place that provides health services for children with renal health problems for free.

Subjects:

The subjects of the study sample consisted of a purposive sample of school age children attending urologic outpatient clinic through 2015 was about 1000 cases, Sample size calculated 10% of this total equals 100 mothers of children with nephritic syndrome.

Inclusion Criteria:

The inclusion criteria for this study sample included children accompanied with their mothers, children age from 4 to 12 years old, and diagnosed with nephrotic syndrome since three months. But, children diagnosed with other chronic disease, congenital anomalies, or physical and mental disabilities are excluded.

Tool of Data collection

one tool was used in this study for data collection

An interviewing questionnaire developed by the investigator after reviewing the modern scientific references related to the subject of the study and the opinion of the experts and included the following parts:

• **Part I: Children and Caregivers socio-demographic characteristic** was used to assess socio-demographic characteristics. This part concerned with data pertaining personal data of the study subjects demographic characteristic (Mothers: age, education level, occupation, residence, income and the child age, gender, and child ranking.

• **Part II: Child's past and present medical history** as discovered of illness, causes of illness, age at the onset of the disease/ years, number of hospitalization, causes of re-hospitalization, previous diseases, symptoms, complication and the treatment was received. Also, included side effect of cortisone on body system as cardiovascular system, eye, gastrointestinal system, skeletal muscle, neuropsychiatric, skin, immune system, and endocrine system.

• **Part III: Caregivers' knowledge about nephrotic syndrome** such as meaning, causes, signs and symptoms, investigation, common treatment, adverse effects of steroids, help, healthy food, and complications of nephrotic syndrome.

Scoring system

Each correct answer took one score and the wrong answer or do not known response took (zero). It contained 9 questions. If scores < 50%

means unsatisfactory knowledge and $\geq 50\%$ means satisfactory knowledge.

Part VI: This part concerned with mother's practices to care for children with nephrotic syndrome as edema, child response to therapy, during corticosteroids, nutrition, committing to doctor order in case the child has respiratory infection and child physical activities. It was measured by done or not done.

Scoring system

Each done practice took one score, and not done practice took (zero). It contained 31 questions, if scores $< 60\%$ means not done, if scores $\geq 60\%$ means done.

II. Operational Design:

The operational design included preparatory phase, pilot study and field work.

The preparatory Phase:

It included reviewing of related literature and theoretical knowledge of various aspects of the study using books, articles, papers, periodicals and magazines.

Pilot study:

A pilot study was carried out after the development of the tools and before starting the actual data collection, on 10 subjects (10% of the total sample). The aim of the pilot study was to test the

feasibility of the study and the sequence of items. It also served to estimate the time required for filling the questionnaire sheets which was about 30 minutes. They were excluded from the total number of the study subjects. The process of pilot study took one week (from 1/8 to 7/8) in August 2017.

Validity and Reliability

The tool of the study were given to a group of five experts in the community health nursing at faculty of Nursing; Ain Shams University was elicited regarding the format, layout, consistency, accuracy, and relevancy of the tool.

Reliability of the tool (part III & VI) were performed to confirm validity of tool and calculated statistically. The internal consistency measured to identify the extent to which the items of the tool measure the same concept and correlate with each other by Cronbach's alpha test were 0.717 & 0.745 respectively.

Field Work

The official approvals were obtained from medical and nursing administration of Pediatric Ain Shams university hospital. Prior to collection of data, a formal letter issued from the vice dean of post graduate studies and research at Faculty of Nursing, Ain Shams

university, and the approval of ethical committee. Submitted to medical and nursing administrations to help to conduct the study. The letters also listed the data needed for the study. Moreover, a written consent was obtained from each participant. Before the subjects participate in this study, the nature, the aim, methods, and anticipated benefits of the study were explained. The investigator informed the participation is voluntary and they have rights to withdrawal at any time without giving any reasons.

Before distribution of the questionnaire, the investigator met the participants introducing her-self and explained the purpose of the study and the components of the tool to the participants in the study setting. The filling time for the questionnaire sheet took about 30 minutes. Data collection was done during the morning time two days / week (Saturday, Monday) 4- 6 mothers /2 days, August, to September 2017.

III. Administrative Design

An official permission to carry out the study was obtained from medical and nursing administration of Pediatric Ain Shams university hospital through an issued letter from the Dean of Faculty of Nursing/ Ain Shams University.

Ethical Consideration

A written initial approval was obtained from the investigator ethical committee of the Faculty of Nursing, Ain Shams University. The investigator introducing herself to the hospital director and the head nurse of the pediatric outpatient department, and discussed the aim of the study for official permission, then met with mothers of children with nephritic syndrome introducing her and discussed the aim of the study, determined the suitable time to collect the data. Mothers of children with nephrotic syndrome were reassured that all information obtained was confidential, withdrawal at any time and it's not affect the treatment or care they received from hospital.

IV. Statistical Design:

Statistical analysis was done by using Statistical Package for the Social Science (SPSS 20.0). Quality control was done at the stages of coding and data entry. Data were presented by using descriptive statistics in the form of frequencies and percentage for qualitative variables. Chi square (χ^2) was used to test

the association between two qualitative variables or to detect differences between two or more proportions and the sample size large. Fisher's exact test used to test the association between two qualitative variables or to detect differences between two or more proportions and the sample size is small. Graphs were done for data visualization using Microsoft Excel. Inferential statistical tests of significance such as Pearson

correlation, and independent t-test were used to identify group differences and the relations among the study variables. Correlation coefficient test was also used

between total mothers' knowledge and total mothers' practice and statistical significance was considered at $p \leq 0.05$.

Results

Table (1): Distribution of children related to their characteristics (n = 100).

Child characteristics	No.	%
Age (year)		
4- <7	64	64.0
7- 10	36	36.0
Gender		
Male	68	68.0
Female	32	32.0
Ranking		
Single	20	20.0
1st one	16	16.0
Middle	59	59.0
Last	5	5.0

Table (1): showed that 64% of children aged between 4 - < 7 years, 68% of them were males, and 59% of them were the middle child in their family .

Table (2): Distribution of mothers according to their socio-demographic characteristics (n = 100).

Socio-demographic characteristics	No.	%
Age (year)		
20- < 35	60	60.0
35- 50	40	40.0
Educational level		
No read and write	2	2.0
Read and write	18	18.0
Middle	63	63.0
High	17	17.0
Occupation		
Working	43	43.0
Not working	57	57.0
No. of children in the family		
One	36	36.0
Two	17	17.0
Three	36	36.0
More than three	11	11.0
Residence		
Rural	72	72.0
Urban	28	28.0
Income		
Not enough	67	67.0
Enough	33	33.0

Table (2): presented that 60% of mothers aged were ranged between 20- < 35 years, 63.0% of them had middle education , 57.0% not working, 36% of them had one / thee child in their family, 72% of them lives in rural area and 67.0% of mothers suffering from not enough income.

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Table (3): Distribution of children regard their past medical history (n = 100).

Past medical history	No.	%
Discover Nephrotic Syndrome		
A relative had kidney disease	3	3.0
An accident in physical examination	8	8.0
Symptoms and then it was confirmed	89	89.0
Causes of illness		
Genetic	21	21.0
Infection	7	7.0
Unknown	72	72.0
Age at the onset of the disease/ years		
3 - ≤ 4	65	65.0
≥ 5 years	35	35.0
Number of hospitalization		
One	56	56.0
Two	41	41.0
Three	3	3.0
Causes of re-hospitalization (n= 44)		
Infections	24	54.5
Relapse and infection	20	45.5
#Previous diseases:		
#If yes , the diseases is (n= 79)		
UTI	61	77.2
RTI	30	38.0
Flu	66	83.5
#The child had symptoms		
Foamy urine/ bubbly urine	8	8.0
Edema/Swelling	84	84.0
Hypoalbuminemia	10	10.0
Reduced urine	83	83.0
Fatigue/poor appetite	75	75.0
High blood pressure	8	8.0
# The child has complications as		
Infection	87	87.0
Blood clot	0	0.0
Coronary heart disease	0	0.0
Electrolyte and metabolic disorders	25	25.0
# kind of treatments the patient has received		
Drugs that Control the immune system. (corticosteroids)	98	98.0
Diuretics drugs	85	85.0
Drugs that lower blood pressure.	8	8.0
Dialysis	0	0.0
Done Renal Biopsy for the child		
	8	8.0

#Answers are not mutually exclusive

table (3): showed that 89% of children discovered nephrotic syndrome by symptoms and then it was confirmed, 72.0% of them cause of the disease unknown, 65% the disease onset at $3 \leq 4$ years of age, 56% of the children was admission into hospital first time and 54.5 of children who re-hospitalized due to occurrence of infections. It observed that 79.0% of children had previous disease 83.5% of who have previous disease had flu disease. The most common symptoms occurred to the children were edema, reduced urine, and fatigue with poor appetite (84.0%, 83.0%, and 75.0% respectively), 87.0% of children had infection as a complication of nephrotic syndrome. Finally, the vast majority of the children are not done renal biopsy.

Figure (1): Distribution of mothers according to total score level of knowledge about nephrotic syndrome (n = 100).

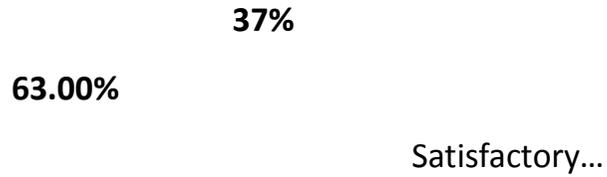


figure (1): illustrated that 37.0% of mothers' had satisfactory knowledge level about nephrotic syndrome and 63.0% of them had unsatisfactory knowledge level.

Figure (2): Distribution of mothers' stated practices related to total score level (n = 100).

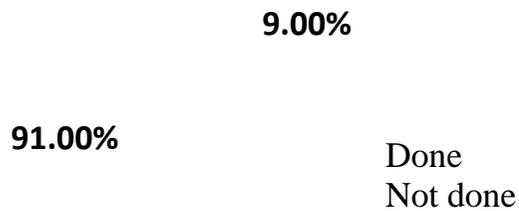


Figure (2): illustrated that 91.0% of mothers' not done correctly about practices and 9.0% of them done it.

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Table (4): Relation between mother's knowledge about nephrotic syndrome and their socio demographic characteristics

Mother personal characteristics	Knowledge level				X ²	P - value
	Unsatisfactory (n= 63)		Satisfactory (n= 37)			
	No.	%	No.	%		
Age (year)						
20- < 35	33	52.4	27	73.0	4.118	.04*
35- 50	30	47.6	10	27.0		
Educational level						
No read and write	2	3.2	0	0.0	fisher 36.127	.000**
Read and write	12	19.0	6	16.2		
Middle	49	77.8	14	37.8		
High	0	0.0	17	45.9		
Occupation						
Work	31	49.2	12	32.4	2.676	.102
Not work	32	50.8	25	67.6		
No. of children in the family						
One	29	46.0	7	18.9	fisher 27.077	.000**
Two	14	22.2	3	8.1		
Three	20	31.7	16	43.2		
More than three	0	0.0	11	29.7		
Residence						
Rural	43	68.3	29	78.4	1.185	.276
Urban	20	31.7	8	21.6		
Income						
Not enough	63	100.0	4	10.8	fisher 83.864	.000**
Enough	0	0.0	33	89.2		

NS= not statistical significant

** P – value ≤ 0.01

Table (4): showed that 73.0% of mothers with satisfactory level aged between 20 < 35 year, 45.9% of them had high educated level, 43.2% of them had three children, and 89.2% of them had sufficient income lead to improve knowledge level. Also, there were statistically significant differences between mothers' knowledge and demographic characteristics of the mothers except occupation and their residence.

Table (5): Relation between mother’s practices towards care for their children with nephrotic syndrome and their socio demographic characteristics .

Mother personal characteristics	Practice level				X ²	P - value
	Not done (n= 91)		Done (n= 9)			
	No.	%	No.	%		
Age (year)						
20- < 35	53	58.2	7	77.8	fisher 1.302	.254 NS
36- 50	38	41.8	2	22.2		
Educational level						
No read and write	2	2.2	0	0.0	fisher 6.059	.109 NS
Read and write	16	17.6	2	22.2		
Middle	60	65.9	3	33.3		
High	13	14.3	4	44.5		
Occupation						
Work	39	42.9	4	44.4	.008	.927 NS
Not work	52	57.1	5	55.6		
No. of children in the family						
One	34	37.4	2	22.2	7.701	.01*
Two	16	17.6	1	11.1		
Three	34	37.4	2	22.2		
More than three	7	7.7	4	44.5		
Residence						
Rural	65	71.4	7	77.8	.164	.686 NS
Urban	26	28.6	2	22.2		
Income						
Not enough	67	73.6	0	0.0	fisher 20.080	.001**
Enough	24	26.4	9	100.0		

NS= not statistical significant

** P – value ≤ 0.01

Table (5): found that 44.5% of mothers with good practice had more than three children in their family, and 100.0% of them had enough income with no statistically significant differences between mothers’ practice and demographic characteristics of the mothers except number of children in the family and their income which p – value ≤ .01 & .001 respectively.

Table (6): Correlation between mothers' knowledge and their practice level (n= 100)

Items	Mother knowledge	
	r	P - value
Mother practice level	.784	.0001**

table (6): there was strong positive association between mothers' knowledge and their practice level which $r = .784$ and $P - \text{value} \leq .0001$.

Discussion:

Mother always greatest source of support and should be included in teaching. If they have received the same information as the child, they can better reinforce teaching with the child. Severe anxiety closes observation and special nursing interventions. It is often these severely anxious children in whom disorientation or frank psychosis develops with nephrotic syndrome. If the child is able to acknowledge the fear and anxiety, it is easier for the nurse to intervene by talking with the child, allowing verbalization of concerns, and providing reassurance (**Crandall et al., 2018**).

Regarding personal characteristics of children (**Table 1**) the present study showed that near to two third of children aged between 4 - < 7 years and was the middle child in their family also, more than two third of them were males. The study results were supported by **Khider, et al., (2017)** who assessed nephrotic syndrome knowledge and health care related practices among

school age children and their mothers at the pediatric medicine departments at

Cairo University Specialized Pediatric Hospital and at the medicine departments and outpatient clinic at EL-Moniera Hospital, found that more than three quarters of children was male (76%) and near to half of them ranked as middle child. **Also, Devi et al., (2017)** assessed the knowledge among caregivers regarding care of child with nephrotic syndrome before and after administration of information booklet and the effectiveness of the booklet on knowledge in India, reported that three quarter of children with nephrotic syndrome aged between 1 day to 5 years and more than two third of them were males.

Concerning socio-demographic characteristics of mothers (**Table 2**) the present study presented that more than half of mothers not working, aged were ranged between 20 - < 35 years, near to two third of them have middle education, and less than three quarter of mothers lives in rural area, slightly more than two third suffering from not enough

income also, more than one third of them had one / thee child in their family. On the same line, **Devi et al., (2017)** reported that two third of their caregiver aged between 20- 30 years.

Concerning to number of hospitalization (**Table 3**) the present study showed that more than one third of children with NS re-admission into hospital 2nd time. This result was supported by **Sarika (2017)** assessed the knowledge and practices of parents regarding home management of children with nephrotic syndrome which conducted at Maharishi Markandeshwar Institute of Medical Sciences and Research Hospital- Mullana, Ambala; Civil Hospital Ambala; Kalpana Chawla Government Medical College and Hospital Karnal, Haryana, India, mentioned half of the studied children had previous hospitalized.

Regarding causes of re-hospitalization (**Table 3**) the present study presented that more than half of children the main cause was infections followed by more than three quarters was relapsing of the disease and occurrence of infection. This finding is consistent with **Sarker et al., (2012)** do retrospective study was conducted in the pediatric department of Dhaka Medical College Hospital (DMCH) from among 50 had Frequent Relapse NS (FRNS) and 50 had

Infrequent Relapse NS (IFRNS) mentioned that UTI, RTI common in frequent relapse of NS (44.0% & 34.0% respectively). Also, **Ghobrial et al., (2013)** studied the behavioral changes in Egyptian children with nephrotic syndrome, reported that more than half of them (60%) occurred less than 5 relapse in mean illness duration 4.7 years.

Regarding symptoms appeared on their child (**Table 3**) this study presented that the majority symptoms were edema / swelling and anuria followed by three quarters suffered from fatigue / poor appetite and the minority have foamy urine, hypo-albumenia, and hypertensive. This finding is consistent with **Lane and Langman, (2015)** reported that the most children with NS presenting edema.

Regarding done renal biopsy for the child with NS (**Table 3**) the present study reported that vast majority of the children are not done renal biopsy. The study result was supported by **Zyarah and Mua'ala, (2013)** mentioned that the vast majority of children have no renal biopsy (93.8%).

Regarding total knowledge level of mothers (**Figure 1**) this study illustrated that more than one third of them had satisfactory level and near to two third of them had unsatisfactory knowledge level. In accordance with

Saraswathi et al., (2013) assessed the knowledge on nephrotic syndrome among mothers of children admitted with nephrotic syndrome in Indira Gandhi institute of child health Bangalore reported that 70% mothers had inadequate knowledge, 18.3% had moderate knowledge and 11.7% had adequate knowledge regarding nephrotic syndrome. Also, **Hussein and Abdel Sadek, (2013)** determined impact of adjustment of oral fluids intake on decreasing edema among school age children with NS in medicine wards in New Educational Specialized Pediatric Hospital and El-Moneera Educational Pediatric Hospital, Cairo University, found that the majority of children's (84%) had unsatisfactory knowledge about NS.

Contradicted with this result study done by **Devi et al., (2017)** mentioned that near to third quarters of caregivers of children of nephrotic syndrome had good pre-test knowledge these differences in this result may be due to gender of caregivers were male and female (1:2) and more than half of them had secondary education with no positive history of NS. Also, **Sarika (2017)** revealed that more than three quarters (80%) of parents had below average knowledge regarding home management of children with NS.

Regarding total practice level of mothers (**Figure 2**) the present study illustrated that the most of them not done correctly. Similarly, a study conducted by **Sarika (2017)** found the most (93.3%) parents of children with NS had poor practice level. Also, **Zyarah and Mua'ala, (2013)**, assessed mothers' practices toward children with steroid – sensitive Nephrotic Syndrome (SSNS) who are visiting nephrology consultation units of Baghdad pediatrics hospitals, showed that mothers have poor practices (61.3%).

This finding is inconsistent with Khider, et al., (2017) found that less than three quarters of mothers (74.0%) had unsatisfactory score in their reported health care related practices knowledge

Concerning to relation between mother's knowledge about nephrotic syndrome and their age (**Table 4**) the present study showed that there were a highly statistical significance differences between it. This result answered research question one and supported by **Devi et al., (2017)** mentioned that significance differences with younger age due to the age increase there is increased in knowledge of the caregivers .

But Hakim, Madhooshi, and Valavi (2013) determined the knowledge of parents of children with nephrotic syndrome toward recurrence of disease

found that there was no a significant correlation between the average age of the studied parents and their knowledge ($P = 0.4$). This research not clarify duration of disease among their children so that may a cause of no statistically significance and they acquire knowledge by long duration of illness.

Concerning to relation between mother's knowledge about nephrotic syndrome and their educational level and family income (**Table 4**) the present study analyzed that there were a highly statistical significance differences between it. This result answered research question one and on the same line, **Khider, et al., (2017) their studied showed that** there was highly statistical significant correlation between mothers' knowledge regarding NS and their level of education and family income as mothers' knowledge was increased with highly educated mothers, with housewife's mothers and by increased family income. **Sarika (2017)** presented that there was a significance association between knowledge score and monthly income of family. Opposite findings of this results reported by **Hakim et al., (2013)** found that a non-significance association between knowledge scores and age of mothers and monthly income

Concerning to relation between mother's practice about nephrotic

syndrome and their age, educational level, occupation, and residence (**Table 5**) the present study reported that there were no statistical significance differences between it. This result answered research question two and **on the same line, Zyarah and Mua'ala, (2013)** mentioned that no a significant association between mothers' practices and their mother's age and occupation

Concerning to correlation between mothers' knowledge and their practice level (**Table 6**) the present study analyzed that there was strong positive association between mothers' knowledge and their practice level. This result answered research question three and in accordance with **Khider, et al., (2017)** found that there was highly statistical significant positive correlation between mother knowledge and reported health care related practice. Also, **Sarika (2017)** found positive co-relation of knowledge score and practice score of parents

Conclusion

Based on the findings of the current study the following conclusions can be drawn: more than one third of the mothers of children with nephrotic syndrome had unsatisfactory knowledge level and the vast majority of them not done correctly care to their children. Also, there were statistically significant differences between mothers' knowledge and

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demographic characteristics of the mothers except occupation and their residence. Moreover, no statistically significant differences between mothers' practice and demographic characteristics of the mothers except number of children in the family and their income which P – value $\leq .01$ & $.001$ respectively and there was strong positive association between mothers' knowledge and their practice level.

Recommendations

Based on the results of the present study and research questions the following recommendations are suggested:

- Conducting educational classes for the mothers and their children about nephrotic syndrome to elevate their level of health awareness about disease and its care.
- Dissemination of posters, booklets, and leaflets for family caregivers which describe care at outpatient clinic.
- A need for a written discharge plan including a resource manual for family members and availability of phone line number to contact in emergency situations.

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