

Mother's Follow-Up Management and Psychological Approach toward Their Preschoolers with Recurrent Urinary Tract Infection

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Abstract:

Background:Urinary tract Infection (UTI) is the second most common bacterial infection in children, only after otitis media, affecting round 1.7% of boys and 8.4% within their first six years of life.

Objective: this study aimed to identify mother's follow-up management toward recurrent urinary tract infection.

Methodology:

Design: Cross-sectional design. Setting: Data were collected from AL Zahraa Teaching Hospital. Sample: A non-probability (purposive) sample consisted of(120) mothers.

Results:

The highest percentages for the age categories were 47.5% of mothers (21-28 years old). Although the residence with the highest percentage of mothers (73.3%) had rural area and the educational level, the highest percentage (32.5%) had primary school. Overall assessment of mothers' perceptions toward their preschool-aged children who have frequent urinary tract infections as accepted with (1.97) mean of score.

Conclusion:

The overall assessment of mothers' follow-up management toward their preschoolers with recurrent urinary tract infection was poor.

Recommendation:

Healthcare providers should provide mothers with clear and concise instructions for follow-up management, including when to seek medical attention and how to properly administer medications.

Keywords: follow-up management, Preschoolers, Recurrent Urinary Tract Infection.

Introduction:

Urinary tract Infection (UTI) is the second most common bacterial infection in children, only after otitis media, affecting round 1.7% of boys and 8.4% within their first six years of life. A third to one half of affected children will suffer from at least one recurrence (Petcu, et al., 2021; Seyerzadeh, et al., 2021).

The significance of UTIs in children lies in their potential to cause serious complications such as kidney damage, sepsis, and even death if left untreated. UTIs can also cause pain, discomfort, and inconvenience for the child, which can lead to missed school days and reduced quality of life (Ahmadi, et al., 2020; and Leung, et al., 2019)

Moreover, recurrent UTIs can lead to chronic kidney disease, which is a significant cause of morbidity and mortality worldwide. UTIs can also have economic implications, with costs related to healthcare services, medications, and time off work for caregivers (Ginsburg et al., 2017).

Recurrent urinary tract infections (UTIs) can have a significant impact on preschool-aged children. UTIs are caused by bacteria entering the urinary tract and can cause symptoms such as frequent urination, pain or burning during urination, and fever. (Kaufman, et al., 2019; and Karmazyn et al., 2017).

In summary, the follow-up management of UTIs in children is essential to reduce the risk of recurrent infections, long-term renal damage, and overall health outcomes. Regular monitoring of symptoms, urine culture results, and implementation of preventive measures can help improve outcomes for children with UTIs. (Stein, et al., 2015; and Gupta, et al.,2011)

Methodology:

Cross-sectional design was used to achieved objective of the study at AL Zahraa Teaching Hospital; the studyhas been carried out during the periodJuly 14th, 2022 to March 13th 2023.A non-probability (purposive) sample consisted of (120) mothers. The criteria for the selection of the study sample werechildren aged five years and under,all children who diagnosed of recurrent urinary tract infection.The final study instrument consists of two parts: **Part I:** Socio-demographic data. This part is concerned with the collection of basic demographic data obtained from the nurses by self-administration sheet and interview such as (age, residency, level of education, occupation, monthly income, type of family, number of children, period of disease, the number of disease occurrence in child).

Part II:Mothers' follow-up management about recurrent urinary tract infection. It consists (10) items about follow-up management regarding recurrent urinary tract infection in children.

The data analyzed with Statistical Package of Social Sciences (SPSS) version (24). The following statistical data analysis approaches used in order to analyze and evaluate the results of the study: (Frequency, Percentage, Mean test).

Results:

Table (1): Distribution of Socio-Demographic Characteristic for the Study Sample (N=120)

Variables	categories	Frequency	Percent
Age Group	<= 20	10	8.3
	21 - 28	57	47.5
	29 - 36	30	25.0
	37 - 44	18	15.0
	45 and more	5	4.2
	Total	120	100
	Mean + Sd.	28.28 ± 6.301	
Residency	Rural	32	26.7
	Urban	88	73.3
	Total	120	100
Level of education	Not read and write	29	24.2
	Read and write	22	18.3
	Primary school graduated	39	32.5
	Intermediate school graduated	18	15.0
	Secondary school graduated	2	1.7
	Institute and above	10	8.3
	Total	120	100
Occupation	Employed	14	11.7
	Housewife	106	88.3
	Total	120	100
Monthly Income	Sufficient	48	40.0
	Barely Sufficient	63	52.5
	Insufficient	9	7.5
	Total	120	100

Types of Family	Nuclear	35	29.2
	Extended	85	70.8
Number of Children (years)	<= 3	72	60.0
	4 - 7	48	40.0
	Total	120	100
	Mean + Sd.	3.25 ± 1.41	
Disease duration (years)	<= 1	73	60.8
	2 - 3	45	37.5
	4+	2	1.7
	Total	120	100
	Mean + Sd.	1.46 ± 0.65	
Disease occurrence (years)	<= 2	36	30.0
	3 - 5	78	65.0
	6+	6	5.0
	Total	120	100
	Mean + Sd.	3.23 ± 1.13	

Table (1) According to the demographic results, the highest percentages for the age categories were 47.5% of mothers (21-28 years old). Although the residence with the highest percentage of mothers (73.3%) had urban area and the educational level, the highest percentage (32.5%) had primary school, the majority of participants (88.3%) were housewives. Furthermore, the results of the monthly income survey revealed that the majority of participants (52.5%) had barely sufficient income. Furthermore, the majority of the study sample (70.8%) belonged to extended families; the highest percentage of the study sample (60.0%) had three or fewer children; the disease duration was equal to or less than one year; and the disease occurrence (3-5) was (65.0 %).

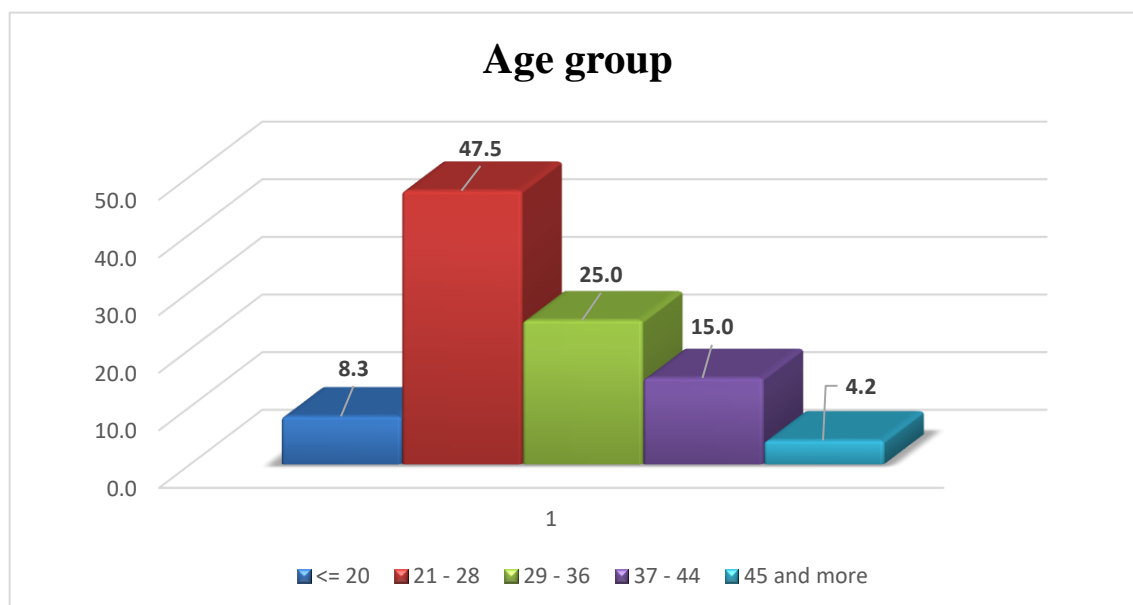


Figure (1): Mother age group

Figure (2): Mother education

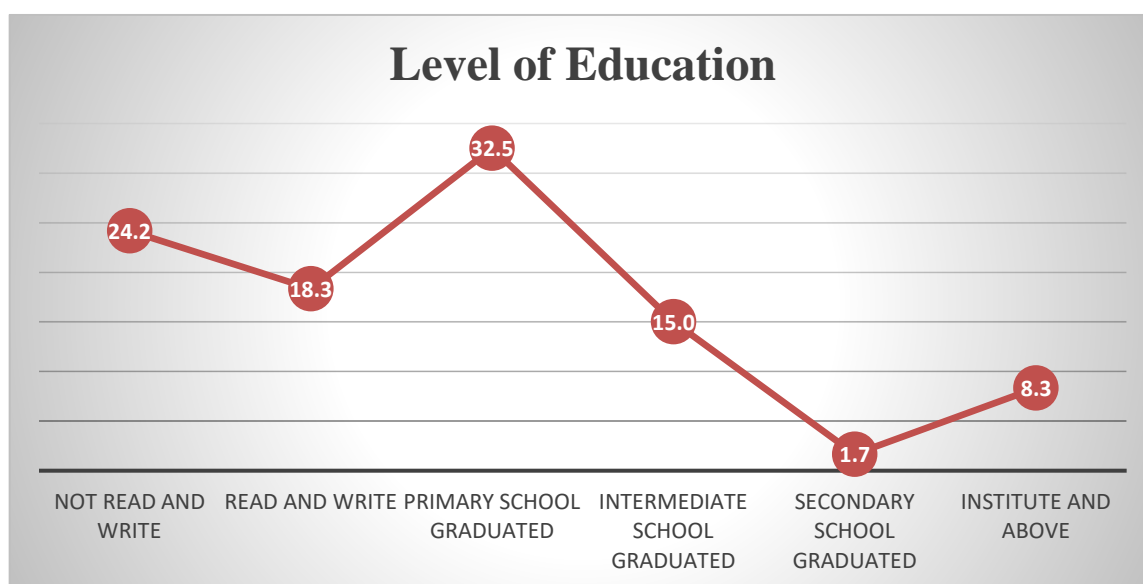


Table (2): Summary of Initial Assessment for Mothers' Follow-up on Preschoolers With Recurrent Urinary Tract Infection.

Items	Responses	Frequency	Percent	MS	Sd.	Rs.	Assess.
1- Encourage the child to go to the toilet when he or she feels the need for that	I do not	67	55.8	1.44	0.50	72.08	Poor
	Yes I do	53	44.2				
2- Give the child plenty amounts of fluids	I do not	51	42.5	1.58	0.50	78.75	Good
	Yes I do	69	57.5				
3- Give the child antibiotics as described to him/her	I do not	45	37.5	1.63	0.49	81.25	Good
	Yes I do	75	62.5				
4- Ask the child whether he feels any pain when urinating	I do not	60	50.0	1.50	0.50	75.00	Good
	Yes I do	60	50.0				
5- Encouraging the child to avoid drinking a carbonated soft drink	I do not	51	42.5	1.58	0.50	78.75	Good
	Yes I do	69	57.5				
6- Take care of the child's personal hygiene, especially the anal area	I do not	77	64.2	1.36	0.48	67.92	Poor
	Yes I do	43	35.8				
7- Follow the child's condition with the doctor continuously.	I do not	80	66.7	1.33	0.47	66.67	Poor
	Yes I do	40	33.3				
8- Visit the doctor when	I do not	79	65.8	1.34	0.48	67.08	Poor

symptoms or other signs of the child appear	Yes I do	41	34.2				
9- Teaching the child on how to wash or wipe from front to back after urination	I do not	81	67.5	1.33	0.47	66.25	Poor
	Yes I do	39	32.5				
10-Encouraging the child to emptying his or her bladder before bedtime	I do not	81	67.5	1.33	0.47	66.25	Poor
	Yes I do	39	32.5				

N (120), poor (mean of score 1.49 and less), good (mean of score 1.5 and more)

According to Table (2), the mother's follow-up responses to the recurring urinary tract infection were good for the following items: giving the child plenty of fluids, giving the child antibiotics as prescribed, asking the child if he feels any pain when urinating, encouraging the child to avoid drinking a carbonated soft drink, and the remaining items were poor.

Tables (3): Overall Assessment of Mothers' Follow-Up on Preschoolers Affected by Recurrent Urinary Tract Infection

Follow up (Overall Assessment)	Responses	Frequency	Percent	MS	Sd.	Assessment
	I do not	61	50.8	1.44	0.18	Poor
	Yes I do	59	49.2			

N (120), poor (mean of score 1.49 and less), good (mean of score 1.5 and more)

According to the table above, the overall assessment of mothers' follow-up toward their preschoolers with recurrent urinary tract infection was poor.

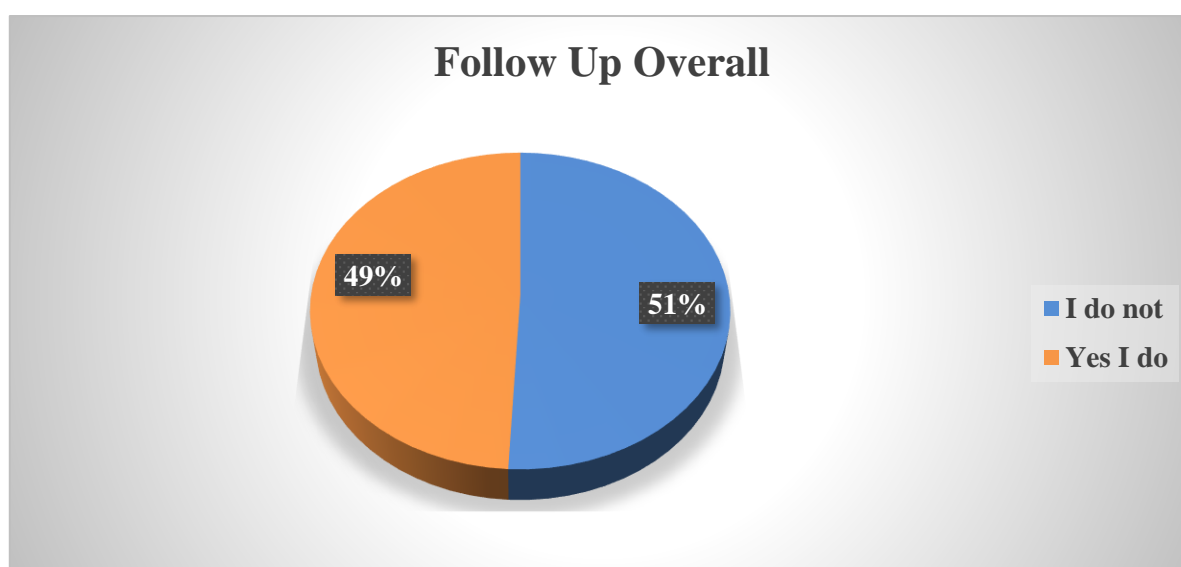


Figure (3):Follow-up management

Discussion:

The current study used a descriptive design to test the mother's perception and follow-up management toward their preschoolers effected with recurrent urinary tract infection. The sample consists of (120) mother.

Analysis of mothers' demographic characteristics was determined. In regard to the study findings the greater percentage of study subjects between the age group of (21-28) years old, this study is matched with the finding of the Seyezadeh et al., (2021). who conducted article related to the Assessment of Parents' Awareness of Urinary Tract Infections (UTIs) in Infants and Children and Related Demographic Factors, which revealed that the majority of study results were the age group of (20-30) years old.

Regarding to the residency the study results showed that highest percentage of study subjects were lived in an urban area. This is in an agreement with the study carried out by Selamat et al., (2020) who reported that the majority of the respondents are living in urban area (95.6%) compared to only (4.4%) from rural area.

Concerning the educational level, most of the subjects were primary school graduated. Depend on the our opinion that the low education can lead to decrease in the perception and follow-up mother's toward recurrent urinary tract infection. This finding is in agreement with the Seyezadeh et al., (2021) who represent that most participants had an education level of primary school.

According to subjects occupation the researcher reported that the majority of study subjects occupation were housewife, this finding supported with the Ahmadi et al., (2020) this article that represent the highest percentage of study sample were a house wif.

However the results of the study reveal that the majority of study subjects economic status were barely sufficient income and this finding is highly agree with Bazargani et al., (2022) whom reported that the moderate income participants.

Regarding to the types of family, the study results showed that highest percentage of study subjects were extended families. This is in an disagreement with the study carried out by Abd Elfatah, et al., (2021) who reported that the more than half of the studied women (53.6%) had nuclear family.

According to subjects number of children, the researcher reported that the majority of study subjects number of children were three children, this finding supported with the Fazel et al., (2019) article that represent the highest percentage of study sample were a three children.

Related to the disease duration, the results show that the most subjects of the study were equal or less than one year, however the study reveals that the majority of study subjects were disease occurrence(3-5) years, this study is matched with the finding of the Campbell et al., (2021), which revealed that the most of study results were disease duration less than one year and frequencey of urinary tract infection more than two time per year.

According to Table (2), the mother's follow-up responses to the recurring urinary tract infection were good for the following items: giving the child plenty of fluids, giving the child antibiotics as prescribed, asking the child if he feels any pain when urinating, encouraging the child to avoid drinking a carbonated soft drink, and the remaining items were poor.

Mothers' follow-up management of recurrent urinary tract infections (RUTIs) in children can be poor. According to a study published in the Journal of Pediatric Urology, mothers of children with RUTIs reported poor adherence to follow-up management, including lack of compliance with medication regimens and failure to schedule follow-up appointments (Chen et al., 2016).

Another study published in the International Journal of Pediatric Nephrology and Urology found that mothers' lack of knowledge about RUTIs, lack of perceived need for follow-up, and lack of access to healthcare were major barriers to appropriate management of RUTIs in children (Al Alousi et al., 2018).

It is important for healthcare providers to work closely with mothers to educate them about RUTIs and to provide support to ensure proper follow-up management. This can include providing clear instructions for medication regimens, scheduling follow-up appointments, and providing resources for mothers to access additional information and support.

Follow-up management for recurrent urinary tract infections (UTIs) in children can be challenging, and studies have shown that mother's follow-up management may be poor. A study published in the Journal of Pediatric Urology found that mothers of children with recurrent UTIs had poor adherence to follow-up management recommendations, including not completing the full course of antibiotics, not returning for follow-up appointments, and not following up with urine cultures as recommended (El-Khuffash et al., 2013).

Another study published in the *Journal of Pediatric Nursing* found that mothers of children with recurrent UTIs had a lack of knowledge about the condition and its management, which may contribute to poor follow-up management (Sánchez-Sánchez et al., 2016).

It is important for healthcare providers to educate mothers about the importance of follow-up management for recurrent UTIs in children, and to work with them to develop strategies to improve adherence to recommended treatment and follow-up care.

A study published in the *Journal of Pediatric Urology* found that mothers of children with recurrent UTIs had poor knowledge about the condition and its management, and many did not adhere to recommended follow-up protocols (Chen et al., 2016). The study also found that mothers experienced a high level of distress and anxiety related to their child's recurrent UTIs, which may have contributed to poor follow-up management.

Another study published in the *Journal of Pediatric Nursing* found that mothers of children with recurrent UTIs reported a lack of clear communication and guidance from healthcare providers, which led to confusion and frustration in managing the condition (Harding et al., 2017).

It is important for healthcare providers to ensure that mothers of children with recurrent UTIs have accurate information about the condition and its management, and to provide clear guidance and follow-up protocols to support mothers in managing the condition.

Mothers' follow-up management of recurrent urinary tract infections (UTIs) in children may be poor due to a variety of reasons. A study published in the *Journal of Pediatric Urology* found that mothers of children with recurrent UTIs reported difficulties in adhering to preventive measures and in coordinating follow-up care with healthcare providers (Chen et al., 2016).

Some of the reasons for poor follow-up management may include lack of knowledge about UTIs and their management, lack of access to healthcare, difficulty coordinating follow-up appointments, and competing demands on mothers' time and resources. Additionally, mothers may not fully understand the importance of follow-up care and may not prioritize it over other responsibilities. It is important for healthcare providers to educate mothers about the importance of follow-up care and to provide support and resources to help them manage their child's recurrent UTIs (Alshahrani, & Alzahrani, 2020; Beahm, et al., 2017).

Follow-up management for recurrent urinary tract infections (UTIs) in children can be poor due to a variety of factors. A study published in the *Journal of Pediatrics* found that mothers of children with recurrent UTIs reported poor follow-up management, which included lack of communication between healthcare providers and the family, lack of information about the condition and its management, and lack of access to appropriate care (Hsu et al., 2016).

In order to improve follow-up management for recurrent UTIs in children, healthcare providers should work closely with families to ensure they have accurate information about the condition, its management, and how to prevent recurrence. Providers should also work to create effective communication and coordination of care among different healthcare providers involved in the child's care.

There has been research suggesting that the follow-up management of recurrent urinary tract infections (UTIs) in children may be poor. A study published in the *Journal of Pediatric Urology* found that "follow-up after a first febrile UTI is often inadequate, and recurrences are common" (Brandström, & Lindén, 2021). The study also found that there were a lack of guidelines for follow-up care and management of recurrent UTIs in children, which may contribute to the poor follow-up.

A study published in the *Journal of Pediatric Health Care* found that mothers of children with recurrent UTIs reported poor communication and follow-up care from healthcare providers, leading to feelings of frustration and dissatisfaction with the care received (McHugh et al., 2008).

Follow-up management for recurrent urinary tract infections (UTIs) in children can be a challenge for mothers, as they may not have accurate information about the condition or may not understand the importance of proper follow-up care. This can lead to poor adherence to treatment recommendations and an increased risk of future infections (Tullus, et al., 2018).

A study published in the *Journal of Pediatric Urology* found that mothers of children with recurrent UTIs had poor knowledge about the condition and the importance of follow-up care. The study also found that mothers had difficulty remembering and following treatment recommendations, and that there was a lack of communication between mothers and healthcare providers about the management of recurrent UTIs (Chen et al., 2016).

It is important for healthcare providers to provide clear and accurate information about UTIs and their management to mothers, and to involve them in the decision-making process. This can help to improve adherence to treatment recommendations and reduce the risk of recurrent infections.

Several studies have found poor mothers' follow-up regarding recurrent UTIs in children. One study conducted in Iran found that only 15% of mothers followed up with their children's physicians after their first UTI, and only 4% followed up after their second UTI (Naseri et al., 2013). Another study in Saudi Arabia found that only 32% of mothers reported taking their children for a follow-up visit after a UTI (Al-Maghrabi et al., 2017). These findings suggest that mothers' follow-up regarding recurrent UTIs in children is often inadequate and needs to be addressed to prevent future infections and complications.

Follow medication instructions: If the doctor prescribes antibiotics, mothers should ensure that their child completes the full course of medication as directed, even if symptoms improve. This can help prevent recurrent infections and antibiotic resistance.
Schedule follow-up appointments: It is essential to schedule a follow-up appointment with the doctor to ensure that the infection has cleared up completely. This can also help identify any underlying issues that may increase the risk of recurrent infections (Tullus, et al., 2018).

Conclusions:

The study on mother's follow-up management toward their preschoolers with recurrent urinary tract infection (UTI) showed that most mothers have a accepted understanding of UTI, but they lack proper follow-up management.

Recommendations:

Based on the findings of this study, the healthcare providers should provide mothers with clear and concise instructions for follow-up management, including when to seek medical attention and how to properly administer medications. Health education programs should be provided to mothers to increase their knowledge and understanding of UTI, its causes, symptoms, and treatments. This would enable mothers to take appropriate actions and make informed decisions.

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