

Assessment of Parents' Awareness about Urinary Tract Infections in Children of Babylon Province

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Abstract

Background: Urinary tract infection (UTI) is one of the commonest infectious diseases in children. Early recognition and prompt treatment are vital aspects in its management to prevent complications. The major challenges for parents, clinicians, and health workers are related to the wide variation of disease presentation. So the parents must be fully informed about UTI in children. **Objective:** To assess parents' awareness about UTI in their children and determine the main factors that may affect the degree of parents' awareness. With the enhancement of parents' awareness via correction of any wrong answers, resolving any question or confusion. **Materials and Methods:** This is a cross-sectional study conducted from March 2021 until the end of June 2021 and included 300 parents of children aged 2–12 years, presented with symptoms suggestive of UTI visiting teaching hospitals, primary health care centers, and urological and pediatric private clinics in Babylon province. Parents were interviewed for about 10–15 minutes by using a predesigned questionnaire. **Results:** Mean age was 32.20 ± 8.81 years. Females comprised the majority of study participants (77.67%), whereas males comprised the remaining (22.33%). All of the fathers were married, as were 95.71% of mothers. Most fathers had university or higher education (55.22%), whereas most mothers had below-university education (57.08%). Most of the parents had medium income (85% of fathers and 83% of mothers). About two-third of them reside in urban areas (68% of fathers and 64% of mothers). Two children account for higher rank of children number (28%). Fever was the most frequent presenting symptom (65%). Overall parents' awareness score was medium in 50% of participants and high in 49%. Similarly, symptoms, diagnosis, and treatment scores were nearly equal between high (46.67%, 44.33%, and 44.67% respectively) and medium (45.67%, 45.67%, and 45.67% respectively), while prevention score was high in 52%, complication score was medium in 59%. Symptoms and diagnosis scores were significantly higher in residents of rural areas. Treatment and prevention scores were significantly higher in those with higher education. Complication score was significantly higher in those with higher children number, male, illiterate, and rural residents. **Conclusions:** Parents in Babylon province have an acceptable level of awareness about UTI in their children, with highly educated parents having more degree of awareness about UTI treatment and prevention than those with a lower level of education. Parents from rural areas have more information about UTI symptoms, diagnosis, and complications than those from urban areas, with important role of experience on the parents' awareness about UTI complications.

Keywords: Awareness, Babylon, parents, UTI

INTRODUCTION

One of the most common infectious diseases in children is urinary tract infection (UTI).^[1] It is more frequent in girls than boys, as around 2% of boys and 8% of girls develop UTI at the age of 11 years old.^[2] The major challenges for parents, clinicians, and health workers are related to the variation of disease presentation and prevalence, which depend on age, sex, race, region, and culture.^[3]

UTIs are classified according to the site of infection as lower and upper UTIs; lower UTI (cystitis) is an inflammation of the bladder mucosa, presented as dysuria, frequency, urgency, enuresis, hematuria, suprapubic pain,

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and malodorous urine. Upper UTI (pyelonephritis) is an inflammation of the renal pelvis and parenchyma, and the patient presented with fever, chills, and flank pain and may be severe enough to cause septic shock.^[4]

The long-term consequences of UTI in children especially if inadequately treated and followed up are chronic abdominal pain and renal scar that result in hypertension and chronic renal insufficiency in adulthood.^[5] So the early recognition and prompt treatment are considered vital aspects in management of UTI in children to lessen the risk of adulthood complications.^[6]

In children, it is likely to prevent infection of urinary tract and protect the child from the potential risks of the disease by improvement of health behaviors,^[7] as there are many factors that can lead to the development of UTI including those related to low level of family's health awareness about child care, such as using suitable underwear, washing methods, and gastrointestinal tract infection management.^[8]

Because the symptoms of UTI in children are distinct from those that are common in adults and arise insidiously, parents' recognition of infection is challenging. The widespread misunderstandings about the symptoms of UTI may cause delay in parents seeking medical care.^[9]

The investigations required for pediatric UTI diagnosis include urinalysis and urine culture, which required urine samples collected noninvasively in sterile urine container or invasively via urethral catheterization or suprapubic aspiration for younger children.^[10] The invasive procedures are preferred as urine sample contamination is more likely to occur when collected by urine container; however, invasive methods are more distressing to parents and children.^[11]

Follow-up imaging tests such as ultrasound and voiding cystourethrogram may be used to identify renal abnormalities, with the former being suggested as a first step as it is less invasive.^[10]

The parents must be fully informed about their child's care, pediatric UTI symptoms, signs and complications, the diagnostic procedures options, follow-up tests, and treatment plans, and this the main aim of family-centered care by participation of parents in management decisions making, taking their preferences in account, with continuous communication about treatment steps using understandable language.^[12]

MATERIALS AND METHODS

Study design, sample, and setting

This is an analytical cross-sectional study performed on parents of children aged 2–12 years, presented with symptoms suggestive of UTI visiting Babylon Maternity and Pediatrics Teaching Hospital, Imam Al-Sadik General Teaching Hospital, Al-Hilla General Teaching Hospital,

primary health care centers, and urological and pediatric private clinics in Babylon province.

The study was performed over the course of three-month period from the first of March 2021 until the end of June 2021.

Sample size

The total number of parents who participated in the study was 300, determined according to the following equation $N = Z^2 P(1-P)/D^2$. Depending on UTI prevalence (32%) reached by Hussein *et al.* in Baghdad in 2017.^[13]

Inclusion criteria

All parents having a child aged 2–12 years presented with symptoms suggestive of UTI who visited the above-mentioned medical institutions were involved in the study.

Exclusion criteria

Reluctance to participate in the study.

Data collection tools and scoring system

Parents were interviewed for about 10–15 minutes after stabilization of their children's condition by using a predesigned questionnaire containing 35 questions divided into 5 categories (symptoms, diagnosis, treatment, complications, and prevention). Also, the questions were classified according to the quality into three levels (easy, medium, and difficult).^[14]

The answer to each question was either true or false; each correct answer was given a positive score (1, 2, and 3 points for easy, medium, and difficult questions, respectively), whereas the incorrect answer was given a zero score. The final score of each participant was presented in the form of low, medium, or high for each of the following items (total, symptoms, diagnosis, treatment, complications, and prevention scores) according to scoring system shown in Table 1.^[14]

Also, the gathered information included child presenting symptoms, parents' age, sex, marital status, education degree, family income, residence, and children number, with brief history about the current condition and any previous medical problem.

After completion of the questionnaire, any wrong answers were corrected to the parents, also any question or confusion was resolved.

Table 1: Awareness scoring system

Items	Low	Medium	High
Total score	0–22	23–45	46–67
Symptoms score	0–4	5–9	10–13
Diagnosis score	0–4	5–8	9–12
Treatment score	0–5	6–10	11–15
Complication score	0–5	6–10	11–15
Prevention score	0–4	5–8	9–12

Statistical analysis

SPSS® software (version 23.0 For Linux® operating system) was used to perform statistical analysis for this study. Continuous variables were represented as means $\pm$ SD, whereas categorical variables were represented as frequencies and percentages. ANOVA test was used to compare means between three or more groups, whereas chi-square test was used to assess the relationship between categorical variables. *P*-value of ≤ 0.05 was considered statistically significant.

Ethical approval

The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. It was carried out with patients verbal and analytical approval before sample was taken. The study protocol and the subject information and consent form were reviewed and approved by a local ethics committee according to the document number 4 (including the number and the date in 15/1/2021) to get this approval.

RESULTS

This study included a total of 300 parents; age of participants ranged from 18 to 55 years with a mean age of 32.20 ± 8.81 years and a median of 30 years. Age group distribution of study participants is illustrated in Figure 1.

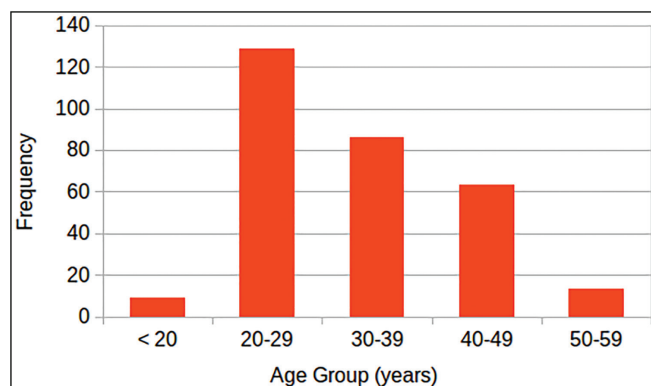


Figure 1: Age group distribution among study participants (*n* = 300)

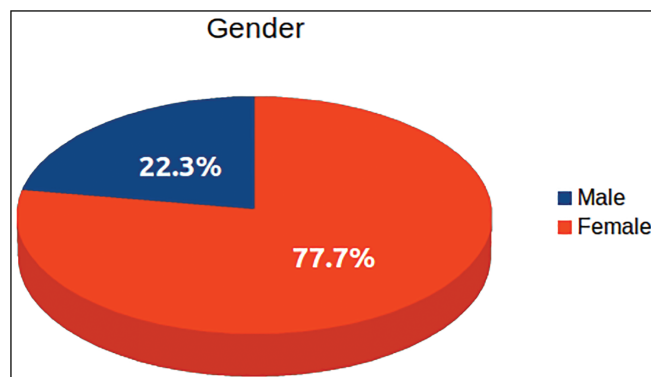


Figure 2: Gender distribution among study participants (*n* = 300)

Females comprised the majority of study participants (77.67%), whereas males comprised the remaining (22.33%), as illustrated in Figure 2. Demographic characteristics for mothers are detailed in Table 2 and fathers are detailed in Table 3. Number of children for each parent is presented in Table 4.

The most frequent presenting symptoms were fever in 65.0% and abdominal pain in 56.7%, followed by irritation of perineal area (39.7%), bad odor of urine (38.0%), dysuria (36.7%), and frequency (36%). Other symptoms include nocturia, anorexia, vomiting, diarrhea, involuntary urination, and hematuria as shown in Figure 3.

Awareness scores among study participants were summarized in Table 5. Awareness scores were compared with certain variables of study participants after being divided into five distinct scores: symptoms score, diagnosis score, treatment score, complications score, and prevention score, as in Tables 6–10, respectively. The total score was also compared with those variables in Table 11.

DISCUSSION

The mean age of the studied parents was 32.20 ± 8.81 years, ranging from 18 to 55 years. Females account for the majority of study participants (77.67%), as a mother is considered as the primary caregiver to her children, whereas males comprised the remaining (22.33%). These results were comparable to other Iraqi studies done by Hasan.^[15] in 2020 and Shabeeb *et al.*^[16] in 2019 that assess parental knowledge about autism spectrum disorder and febrile Seizure in their children, respectively, at Babylon province; they were also compatible with results obtained by Fazel *et al.*^[17] in their study about parents' knowledge, attitude, and practice regarding UTI prevention in children at Tehran, Iran.

All of the fathers were married, as were the majority of mothers; only 3% and 1.29% of mothers were divorced and widowed, respectively. These results were consistent with that reached by Hasan.^[15] but slightly differ from results gained by Seyezaheh *et al.*^[14] in Iran, which show 8.1% of parents were divorced; this might be explained by difference in population and possible effect of the societal norms that assume divorce as a stigma, leading to parents hiding their real marital status.

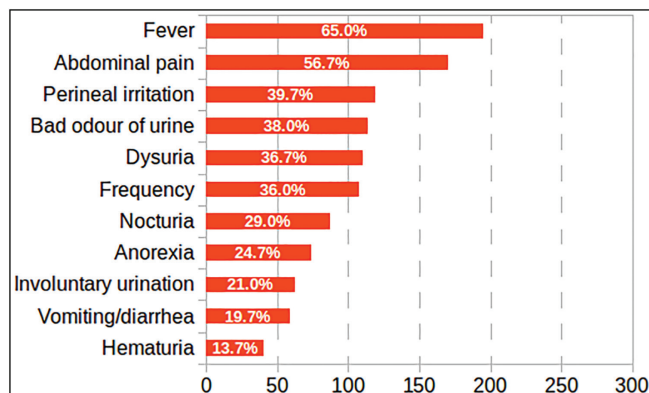
Most fathers had university or higher education, with only less than 5% of them being illiterate, whereas most mothers had below-university education, with nearly 10% of them being illiterate. These differences might be related to social restriction that sometimes prevents women from completing their education, especially after marriage. Comparable finding regarding the level of education and gender difference was reported by Hasan.^[15] and Mohammed *et al.*,^[18] respectively. Whereas lower level of education and less gender difference were reported by

Table 2: Demographic characteristics of mothers (n = 233)

Characteristics	Frequency	Percentage (%)
Marital Status	Married	223
	Divorced	7
	Widowed	3
Education	Illiterate	23
	Below university	133
	University and higher	77
Income	Low	27
	Medium	194
	High	12
Residence	Urban	149
	Rural	84

Table 3: Demographic characteristics of fathers (n = 67)

Characteristics	Frequency	Percentage (%)
Marital status	Married	67
	Divorced	-
	Widowed	-
Education	Illiterate	3
	Below university	27
	University and higher	37
Income	Low	4
	Medium	57
	High	6
Residence	Urban	46
	Rural	21

**Figure 3: Proportions of presenting symptoms (n = 300)**

both Seyerzadeh *et al.*^[14] and Fazel *et al.*,^[17] which might be explained by the difference in population trend to complete education and more opportunity for women to complete an education.

Most of the parents had medium income (85% of fathers and 83% of mothers), which was similar to the finding reported by Qasem *et al.*^[19] About two-third of them reside in urban areas; this result was consistent with that obtained by Hasan,^[15] Shabeeb *et al.*,^[16] Fazel *et al.*,^[17] and Alkhazrajy and Aldeen.^[20]

Table 4: Number of children for each parent

Number of children	Frequency (%)		
	Mothers	Fathers	Total
1	52 (22.32%)	13 (19.40%)	65 (21.67%)
2	68 (29.18%)	17 (24.37%)	85 (28.33%)
3	34 (14.59%)	17 (25.37%)	51 (17.00%)
4	36 (15.45%)	9 (13.43%)	45 (15.00%)
5 or more	43 (18.45%)	11 (16.42%)	54 (18.00%)
Total	233 (100%)	67 (100%)	300 (100%)

Table 5: Awareness scores among study participants (n = 300)

Parents' awareness score	Frequency	Percentage
Symptoms	Low	23
	Medium	137
	High	140
Diagnosis	Low	30
	Medium	137
	High	133
Treatment	Low	29
	Medium	137
	High	134
Complication	Low	6
	Medium	179
	High	115
Prevention	Low	30
	Medium	114
	High	156
Total score	Low	3
	Medium	150
	High	147

Number of children for each parent is highly variable between families, with two children accounting for higher rank, as was reported similarly in Seyerzadeh *et al.*^[14]

Presenting symptoms of UTI are also highly variable between children, but most frequent presenting symptom was fever in 65.0%. This finding was in agreement with the study done by Al Rikabi and Raghif^[21] and Giri *et al.*^[22]

Overall parents' awareness score was medium in half of participants, slightly less percent of parents achieved high score, whereas only 1% got low score. These findings were in agreement with the study done by Hashemiparast *et al.*^[23] But slightly lower results were obtained by Seyerzadeh *et al.*^[14] where 63% of parents got high score, and the remaining achieved moderate score. These discrepancies might be related to difference in studied population, sample size, or study design.

Similarly, symptoms, diagnosis, and treatment parents' awareness scores were nearly equal between high (46.67%, 44.33%, and 44.67%, respectively) and medium (45.67%, 45.67%, and 45.67%, respectively). Also Seyerzadeh *et al.*'s.^[14] results were slightly higher regarding diagnosis

Table 6: Symptoms score

Variables		Score frequency (%)			Total	P-value
		Low	Medium	High		
Parents' age	Mean ± SD	31.0 ± 10.0	32.5 ± 9.0	32.2 ± 8.4	32.2 ± 8.8	0.749*
No. of children	Mean ± SD	3.3 ± 2.0	2.8 ± 1.8	3.1 ± 1.8	3.0 ± 1.8	0.166*
Gender	Male	8 (11.9%)	35 (52.2%)	24 (35.8%)	67 (100%)	0.080
	Female	15 (6.4%)	102 (43.8%)	116 (49.8%)	233 (100%)	
Marital status	Married	23 (7.9%)	131 (45.2%)	136 (46.9%)	290 (100%)	0.837
	Divorced	-	4 (57.1%)	3 (42.9%)	7 (100%)	
	Widowed	-	2 (66.7%)	1 (33.3%)	3 (100%)	
Education	Illiterate	-	12 (46.2%)	14 (53.8%)	26 (100%)	0.145
	Below University	16 (10.0%)	65 (40.6%)	79 (49.4%)	160 (100%)	
	University and Higher	7 (6.1%)	60 (25.6%)	47 (41.2%)	114 (100%)	
Family income	Low	-	17 (54.8%)	14 (45.2%)	31 (100%)	0.246
	Medium	22 (8.8%)	109 (43.4%)	120 (47.8%)	251 (100%)	
	High	1 (5.6%)	11 (61.1%)	6 (33.3%)	18 (100%)	
Residence	Urban	19 (9.7%)	94 (48.2%)	82 (42.1%)	195 (100%)	0.039**
	Rural	4 (3.8%)	43 (41.0%)	58 (55.2%)	105 (100%)	

*Calculated using ANOVA test of significance, **Significant at $P < 0.05$ **Table 7: Diagnosis score**

Variables		Score frequency (%)			Total	P-value
		Low	Medium	High		
Parents' age	Mean ± SD	30.2 ± 7.3	31.5 ± 9.3	33.4 ± 8.5	32.2 ± 8.8	0.095*
No. of children	Mean ± SD	2.7 ± 1.5	2.9 ± 2.0	3.1 ± 1.7	3.0 ± 1.8	0.380*
Gender	Male	10 (14.9%)	31 (46.3%)	26 (38.8%)	67 (100%)	0.260
	Female	20 (8.6%)	106 (45.5%)	107 (45.9%)	233 (100%)	
Marital status	Married	30 (10.3%)	131 (45.2%)	129 (44.5%)	290 (100%)	0.332
	Divorced	-	3 (42.9%)	4 (57.1%)	7 (100%)	
	Widowed	-	3 (100%)	-	3 (100%)	
Education	Illiterate	2 (7.7%)	10 (38.5%)	14 (53.8%)	26 (100%)	0.798
	Below University	17 (10.6%)	71 (44.4%)	72 (45.0%)	160 (100%)	
	University and Higher	11 (9.6%)	56 (49.1%)	47 (41.2%)	114 (100%)	
Family income	Low	2 (6.5%)	10 (32.3%)	19 (61.3%)	31 (100%)	0.337
	Medium	27 (10.8%)	118 (47.0%)	106 (42.2%)	251 (100%)	
	High	1 (5.6%)	9 (50.0%)	8 (44.4%)	18 (100%)	
Residence	Urban	26 (13.3%)	88 (45.1%)	81 (41.5%)	195 (100%)	0.027**
	Rural	4 (3.8%)	49 (46.7%)	52 (49.5%)	105 (100%)	

*Calculated using ANOVA test of significance, **Significant at $P < 0.05$

and treatment, but lower in relation to symptoms. Individual variation and difference in study population might explain this diversity.

Symptoms and diagnosis parents' awareness scores were found to be significantly affected by the residence of parents, the opposite of expected, which were higher in residents of rural area. This might be related to high prevalence of UTI in children of rural population,^[24] leading to more encounters and so more experience of rural parents to identify UTI symptoms and ways to diagnosis, in addition to higher level of community communication between members of rural area than those in urban cites, leading to sharing their stories and

experiences about childrens' sickness and raising the level of their awareness regarding corresponding illness.

Treatment parents' awareness score was not significantly affected by the residence of parents but with their level of education; higher degree of score correlated with higher level of education. Most of the parents with university and higher education obtained high scores; similar finding was obtained by Seyezaheh *et al.*^[14]

Complication parents' awareness score was medium in about 60% of participants, low in only 2%, and high in the remaining. The score is significantly affected by number of children, gender, education level, and residency, with high score related to higher number of children, male

Table 8: Treatment score

Variables		Score frequency (%)			Total	P-value
		Low	Medium	High		
Parents' age	Mean $\pm$ SD	30.1 $\pm$ 6.6	33.1 $\pm$ 9.2	31.8 $\pm$ 8.8	32.2 $\pm$ 8.8	0.178*
No. of children	Mean $\pm$ SD	3.4 $\pm$ 1.8	3.1 $\pm$ 1.8	2.8 $\pm$ 1.8	3.0 $\pm$ 1.8	0.264*
Gender	Male	6 (9.0%)	33 (49.3%)	28 (41.8%)	67 (100%)	0.799
	Female	23 (9.9%)	104 (44.6%)	106 (45.5%)	233 (100%)	
Marital status	Married	27 (9.3%)	133 (45.9%)	130 (44.8%)	290 (100%)	0.093
	Divorced	2 (28.6%)	1 (14.3%)	4 (57.1%)	7 (100%)	
	Widowed	-	3 (100%)	-	3 (100%)	
Education	Illiterate	5 (19.2%)	17 (65.4%)	4 (15.4%)	26 (100%)	0.019**
	Below university	16 (10.0%)	72 (45.0%)	72 (45.0%)	160 (100%)	
	University and higher	8 (7.0%)	48 (42.1%)	58 (50.9%)	114 (100%)	
Family income	Low	4 (12.9%)	14 (45.2%)	13 (41.9%)	31 (100%)	0.681
	Medium	24 (9.6%)	112 (44.6%)	115 (45.8%)	251 (100%)	
	High	1 (5.6%)	11 (61.1%)	6 (33.3%)	18 (100%)	
Residence	Urban	21 (10.8%)	84 (43.1%)	90 (46.2%)	195 (100%)	0.408
	Rural	8 (7.6%)	53 (50.5%)	44 (41.9%)	105 (100%)	

*Calculated using ANOVA test of significance, **Significant at $P < 0.05$ **Table 9: Complication score**

Variables		Score frequency (%)			Total	P-value
		Low	Medium	High		
Parents' age	Mean $\pm$ SD	31.7 $\pm$ 8.8	31.7 $\pm$ 8.2	33.0 $\pm$ 9.7	32.2 $\pm$ 8.8	0.484*
No. of children	Mean $\pm$ SD	3.2 $\pm$ 1.7	2.7 $\pm$ 1.6	3.4 $\pm$ 2.0	3.0 $\pm$ 1.8	0.008***
Gender	Male	4 (6.0%)	40 (59.7%)	23 (43.3%)	67 (100%)	0.028**
	Female	2 (0.9%)	139 (59.7%)	92 (39.5%)	233 (100%)	
Marital status	Married	6 (2.1%)	174 (60.0%)	110 (37.9%)	290 (100%)	0.870
	Divorced	-	3 (42.9%)	4 (57.1%)	7 (100%)	
	Widowed	-	2 (66.7%)	1 (33.3%)	3 (100%)	
Education	Illiterate	3 (11.5%)	11 (42.3%)	12 (46.2%)	26 (100%)	0.001**
	Below University	2 (1.3%)	91 (56.9%)	67 (41.9%)	160 (100%)	
	University and Higher	1 (0.9%)	77 (67.5%)	36 (31.6%)	114 (100%)	
Family income	Low	-	16 (51.6%)	15 (48.4%)	31 (100%)	0.456
	Medium	6 (2.4%)	154 (61.4%)	91 (36.3%)	251 (100%)	
	High	-	9 (50.0%)	9 (50.0%)	18 (100%)	
Residence	Urban	3 (1.5%)	131 (67.2%)	61 (31.3%)	195 (100%)	0.001**
	Rural	3 (2.9%)	48 (45.7%)	54 (51.4%)	105 (100%)	

*Calculated using ANOVA test of significance, **Significant at $P < 0.05$

gender, lower level of education, and rural residency; these results might be explained by high association between these factors and childrens' UTI complication, secondary to UTI complication exposure by parents or their relative, ending with improvement in their awareness about UTI complication. This score is also lower than that obtained by Seyezaideh *et al.*,^[14] which failed to demonstrate such statistical correlation.

Prevention parents' awareness score was high in more than half of participants, low in 10%, and medium in the remaining. With positive significant correlation with educational attainment, higher degree of score is associated with higher educational level. This finding was consistent

with that obtained by Seyezaideh *et al.*^[14] regarding both score degree and educational attainment significant correlation.

CONCLUSIONS

The study concludes that parents in Babylon province have acceptable level (medium to high) of awareness about UTI in their children in both overall score and score of the five components of UTI knowledge (symptoms, diagnosis, treatment, complications, and prevention). Parents with higher educational attainment have more awareness about UTI treatment and prevention than those with lower level of education. The parents from rural areas have more information about UTI symptoms, diagnosis, and complications than those

Table 10: Prevention score

Variables		Score frequency (%)			Total	P-value
		Low	Medium	High		
Parents' age	Mean $\pm$ SD	31.8 $\pm$ 9.7	31.6 $\pm$ 7.9	32.7 $\pm$ 9.2	32.2 $\pm$ 8.8	0.581*
No. of Children	Mean $\pm$ SD	3.2 $\pm$ 2.1	3.1 $\pm$ 1.7	2.9 $\pm$ 1.8	3.0 $\pm$ 1.8	0.473*
Gender	Male	4 (6.0%)	24 (35.8%)	39 (58.2%)	67 (100%)	0.342
	Female	26 (11.2%)	90 (38.6%)	117 (50.2%)	233 (100%)	
Marital status	Married	30 (10.3%)	112 (38.6%)	148 (51.0%)	290 (100%)	0.102
	Divorced	-	-	7 (100%)	7 (100%)	
	Widowed	-	2 (66.7%)	1 (33.3%)	3 (100%)	
Education	Illiterate	4 (15.4%)	7 (26.9%)	15 (57.7%)	26 (100%)	0.026**
	Below university	18 (11.3%)	72 (45.0%)	70 (43.8%)	160 (100%)	
	University and higher	8 (7.0%)	35 (30.7%)	71 (62.3%)	114 (100%)	
Family Income	Low	6 (19.4%)	6 (19.4%)	19 (61.3%)	31 (100%)	0.052
	Medium	22 (8.8%)	104 (41.4%)	125 (49.8%)	251 (100%)	
	High	2 (11.1%)	4 (22.2%)	12 (66.7%)	18 (100%)	
Residence	Urban	15 (7.7%)	80 (41.0%)	100 (51.3%)	195 (100%)	0.113
	Rural	15 (14.3%)	34 (32.4%)	56 (53.3%)	105 (100%)	

*Calculated using ANOVA test of significance, **Significant at $P < 0.05$ **Table 11: Total score**

Variables		Score frequency (%)			Total	P-value
		Low	Medium	High		
Parents' age	Mean $\pm$ SD	25.7 $\pm$ 1.2	31.5 $\pm$ 8.7	33.0 $\pm$ 8.9	32.2 $\pm$ 8.8	0.154*
No. of children	Mean $\pm$ SD	2.7 $\pm$ 1.2	2.9 $\pm$ 1.7	3.1 $\pm$ 1.9	3.0 $\pm$ 1.8	0.729*
Gender	Male	2 (3.0%)	30 (44.8%)	35 (52.2%)	67 (100%)	0.132
	Female	1 (0.4%)	120 (51.5%)	112 (48.1%)	233 (100%)	
Marital status	Married	3 (1.0%)	146 (50.3%)	141 (48.6%)	290 (100%)	0.773
	Divorced	-	2 (28.6%)	5 (71.4%)	7 (100%)	
	Widowed	-	2 (66.7%)	1 (33.3%)	3 (100%)	
Education	Illiterate	1 (3.8%)	13 (50.0%)	12 (46.2%)	26 (100%)	0.474
	Below university	2 (1.3%)	81 (50.6%)	77 (48.1%)	160 (100%)	
	University and higher	-	56 (49.1%)	58 (50.9%)	114 (100%)	
Family income	Low	-	15 (48.4%)	16 (51.6%)	31 (100%)	0.956
	Medium	3 (1.2%)	126 (50.2%)	122 (48.6%)	251 (100%)	
	High	-	9 (50.0%)	9 (50.0%)	18 (100%)	
Residence	Urban	2 (1.0%)	105 (53.8%)	88 (45.1%)	195 (100%)	0.187
	Rural	1 (1.0%)	45 (42.9%)	59 (56.2%)	105 (100%)	

*Calculated using ANOVA test of significance

from urban areas. And experience plays an important role in development of parents' awareness about UTI complications.

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Conflicts of interest

There are no conflicts of interest.

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