

Effect of Preoperative Instructions for Mothers regarding Surgical Repair of Genitourinary Anomalies on their Children Post-Operative Outcomes

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Abstract

Background: Abnormalities of the genitourinary system account for the majority of urogenital disorders in children. External genitourinary malformations are easily identified at birth, while internal defects can be specific when symptoms develop in late infancy. **Aim of study:** Was to evaluate the effect of maternal preoperative guidelines for surgical recovery of urogenital abnormalities on the child's surgical outcome. **Research design:** Quasi-experimental design was used in the study. **Setting:** The study was conducted at Benha Specialized Hospital for Children affiliated to Ministry of Health and Population. **Sample:** 60 mothers with their children were included in the study. **Tools of data collection:** Included three tools , **Tool (I)** ; Structured Interviewing Questionnaire Sheet to assess personal characteristics of mothers and children, mother's knowledge regarding to care of their children undergoing surgical repair of genitourinary anomalies, **Tool (II)** : Assessment Sheet to assess mother's practical knowledge regarding to care of their children undergoing surgical repair of genitourinary anomalies, **Results:** There was highly significant improvement in the studied mothers' total level of knowledge (98.8% had satisfactory knowledge) and total practice post implementation. **Conclusion:** There is a highly significant positive correlation between mothers' total knowledge and their total practice scores regarding genito-urinary anomalies. **Recommendations:** Providing sufficient training for mothers' pre operative instructions regarding to surgical repair of genitourinary anomalies on their children postoperative outcomes to enhance their knowledge and practice.

Keywords: Children, Genitourinary anomalies, Pre operative instructions, Surgical repair

Introduction

The genitourinary system, or genitourinary system, is a reproductive system and urogenital system, consisting of two kidneys, two ureters, one bladder, and one urethra, grouped together because they are adjacent to each other. Abnormalities of the genitourinary system are congenital related to the genitourinary system and reproduction, and while external genitourinary abnormalities can be easily identified at birth, internal structural abnormalities are not known until symptoms

or complications develop in infancy or late childhood (Magagi et al. 2020).

Classification of genital and urinary malformations includes latent testicular disease, yodhayoru, hydrocephalus, inguinal hernia and anal perforation. More than the most common pediatric male are urogenital triangle. This disorder is defined as one or two testicles not descending in the scrotum. At birth, 1-3% of newborn male babies have primary undetermined testicles (Cravero et al., 2019).

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The urethra is a common penile condition that affects one in 250 boys. Anatomical features that can be seen: Poppies with incompletely developed lower urethral part of the penis, penile curvature (urethral color). Edema is commonly defined as the accumulation of serous fluid in the scrotum, To understand the pathophysiology of childhood edema, it is first necessary to clarify the normal occurrence of testicular descent. The developing testis of the foetation is formed after the migration of Y-containing germ cells from the yolk sac to the gonads at 6 weeks gestation (Zhang et al., 2021).

Early detection of congenital disorders includes: Prejudice testing is used to identify people who are at risk for certain disorders, or who are at risk of overcoming a child's illness. Prenatal testing includes screening of the elderly, rhesus monkey blood group incompatibility, and screening for children. Neonatal screening includes clinical examination and testing of hematological, metabolic, and hormonal disorders (Moldenhauer & Flake, 2019).

Nurses play an important role in the education, treatment, and research support of children with congenital abnormalities and their families, learning to live with defects, and helping them achieve optimal health. Managing congenital anomalies requires an individualized approach to the emotional and physical needs of children and parents (Fernandez et al., 2021).

Significance of the study

The incidence of children receiving surgical treatment for urogenital abnormalities at Benha Junior College Children's Hospital increased from 180 in 2018 to 200 in 2019. The researchers observed a high rate of children with urogenital abnormalities who were receiving surgical treatment. Therefore, given the lack

of consciousness given to these children and the risk of many complications associated with insufficient treatment, this study was conducted to evaluate the effect of preoperative instructions given to mothers of children with urogenital abnormalities on surgical outcomes.

Aim of the study:

This study aimed to evaluate the effect of preoperative instructions for mothers regarding to surgical repair of genitourinary anomalies on their children postoperative outcomes.

Research hypothesis:

Mothers who attending the preoperative instructions regarding to care of their children undergoing surgical repair of genitourinary anomalies, would improve their knowledge and practice.

Subjects and method:

Research design:

Quasi experimental research design was used in carrying out this study.

Setting

This study was carried out at inpatient department at Benha Specialized Hospital for Children affiliated to Ministry of Health and population. It constructed from two pediatric surgical departments each department consists of five rooms and each room consists of four beds.

Sample:

Subjects participating in this study included all mothers (60) accompanying children in hospital during the data collection period (September 1, 2019 to the end of February 2020).

Tools for data collection:

Data for the present study was collected using the following three tools:

A) A Structured Interviewing Questionnaire Sheet: It was designed by research in the light of related research .It consists of three parts.

a. The first part: Characteristics of studied mothers such as; age, level of education, Characteristics of studied children such as weight, birth order, number of sibling, Type of genito-urinary anomalies, family history of genito-urinary anomalies,

b. The second part: Assessment of mother's knowledge regarding to care of their children undergoing surgical repair of genitourinary anomalies (pre-posttest)

Scoring System:

The surveyed nurse's responses were compared to the model's primary responses. Don't know was a score (0) An incomplete correct score (1) A complete correct answer was a score (2). Mothers' knowledge levels were categorized as follows: Insufficient knowledge (<60> 60%).

B) Assessment Sheet (Pre-Posttest)

This tool was adapted from **kamel (2015)** and developed by the researcher and revised by supervisors in simple Arabic language to assess mother's practice regarding to care of their children undergoing surgical repair of genitourinary anomalies.

Scoring System:

Scoring system for practice of the studied mothers was calculated as follows: The mothers' practice was classified as; Not done was scored (zero), Done was scored (one). According to the mothers' actual practice, their level of practice was categorized as follows:
Inadequate (< 60%), Adequate (\geq 60%).

Validity of the tools:

These three tools were tested for effectiveness (face, content) by distributing

the tools to an expert panel of three professors and two assistant professors.

Reliability of tools:

Reliability for tools was applied by the researcher for testing the internal consistency of the tools by administration of the same tool to the same subjects under similar condition. After 2 weeks answers from repeated testing were compared (test-re-test Reliability). As reliability of knowledge was 0.76 and reliability of practice was 0.85.

Pilot Study

This was done to check the clarity, feasibility, applicability of the tool and to estimate the time required for filling of the sheet. A pilot study is conducted on (10%) of mothers of children undergoing surgical treatment for urogenital abnormalities, and in terms of time, duration, and its clarity, the research tool, in terms of its clarity, is the study tool, and its applicability to mothers of children who are receiving surgical treatment for urogenital abnormalities. tested.

Field Work

Assessment phase:

A pre-test was conducted using previous tools to assess mothers' knowledge and practice in the treatment of children undergoing surgical treatment for genital abnormalities, the total number of mothers investigated was 60 and divided into equal groups, each group The researchers mothers, interviewed each mother individually, explained the purpose of the study and how to fill out a questionnaire, The survey sheet was distributed twice through the survey phase pre- and post-stage.

Planning phase:

After analyzing the data obtained during the evaluation phase and following a review of the relevant literature, the researchers pointed out the components of preoperative education.

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Implementation phase:

The content of educational guidance was created in light of the evaluation of the actual needs of the mothers surveyed after reviewing the relevant literature. The implementation consisted of 6 sessions: 2 theoretical sessions and 4 practical sessions, and the duration of each session was about 30 minutes.

Evaluation phase:

After implementation, evaluation of mothers' practice regarding surgical repair of genitourinary anomalies was done immediately.

Ethical Considerations:

Prior study conduction, ethical approval was obtained from the scientific research ethical committee of the faculty of nursing, Benha University. The researcher obtained oral approval from mothers of the children to engage in this study. The researcher was informed the mothers that all the gathered data was used for research purpose only, the study was harmless and the study subject had the right to withdraw from the study at any time freely.

Statistical analysis:

The collected material was organized, classified and analyzed using frequency, percentage; mean score, standard deviation, Fisher's exact test, F-test, chi-square test and correlation test. The data was presented in the form of tables and figures using SPSS version 20.

Results:

Table (1): Shows personal characteristics of mothers. As regards to age the mean age of the studied mothers was 28.34 ± 9.23 years, while most of them (80%) were housewives. Regarding the level of education, this table found

that two fifths of them (40%) had secondary education.

Table (2): Clarifies that majority of studied children (80%) were males, and three fifths of them (60%) had from one to less than three years old. While more than three quarters of them (76.7%) had body weight suitable for age.

Figure (1): Clarifies that more than one quarter (26.7%) of them had hanging testes and one fifth (20%) of studied children had hydrocele, obstructed anus, and inguinal hernia.

Figure (2): Clarifies that the intervention had a greater effect on improving studied mothers' knowledge throughout post and follow-up phases (after three months) compared with the pre-intervention phase. Most of studied mothers (98.3%) and (81.7%) had satisfactory level of knowledge about Genito-urinary anomalies during immediately post intervention and follow up phases (after three months) respectively compared with pre-intervention phase.

Table (3): Illustrates that there is a highly statistically significant relation between mothers' characteristics and their total knowledge regarding genito-urinary anomalies in the pre intervention phase while all of them had good knowledge after implementation.

Table (4): Clarifies that there is a highly statistically significant relation between mothers' characteristics and their total practice regarding genito-urinary anomalies. While there is a statistically significant relation between attending training

Table (1): Characteristics of the studied mothers (N=60)

Characteristics	No.	%
Age		
- 20:<25 years	12	20.0
- 25:<30 years	20	33.3
- 30:<35 years	12	20.0
- 35:<40 years	12	20.0
- ≥ 40 years	4	6.7
Mean ± SD	28.34 ± 9.23	
Range	20-43	
Mothers' educational level		
- Illiterate	4	6.7
- Read and write	8	13.3
- Primary education	8	13.3
- Preparatory education	4	6.7
- Secondary education	24	40.0
- Above secondary education	12	20.0
Occupation		
- Housewife	48	80.0
- Working	12	20.0
Number of children		
- Three	4	6.7
- four	8	13.3
- five	32	53.4
- six	8	13.3
- more than 6	8	13.3
Parents' kinship		
- yes	28	46.7
- No	32	53.3
○ Degree of kinship (n=28)		
▪ 1st degree	8	28.6
▪ 2nd degree	16	57.1
▪ 4th degree	4	14.3
Place of residence		
- Rural	22	36.6
- Urban	38	63.4

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Table (2): Characteristics of the studied children (n= 60)

Characteristics	No.	%
Gender		
- Male	48	80.0
- Female	12	20.0
Age		
- < one year	4	6.7
- 1:<3 years	36	60.0
- 3:5 years	20	33.3
Mean ± SD	2.62 ± 1.84	
Weight		
- Fit with age	46	76.7
- Not fit	14	23.3
Child order in the family		
- The 1 st	12	20
- The 2 nd	24	40
- The 3 rd	20	33.3
- Above the 3 rd	4	6.7
Number of brothers and sisters		
- Non	4	6.7
- One	12	20
- Two	32	53.3
- Three and more	12	20

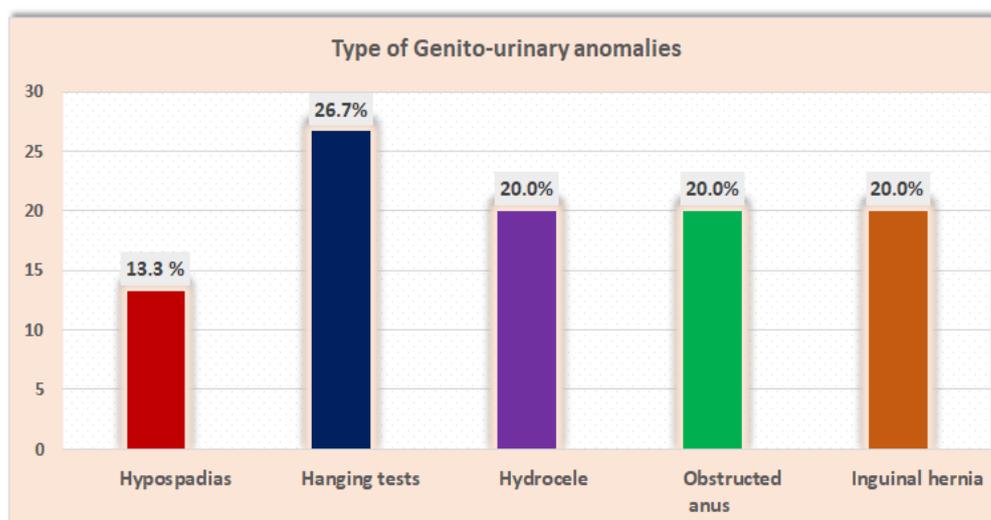


Figure (1): Distribution of genito-urinary anomaly types in the studied children

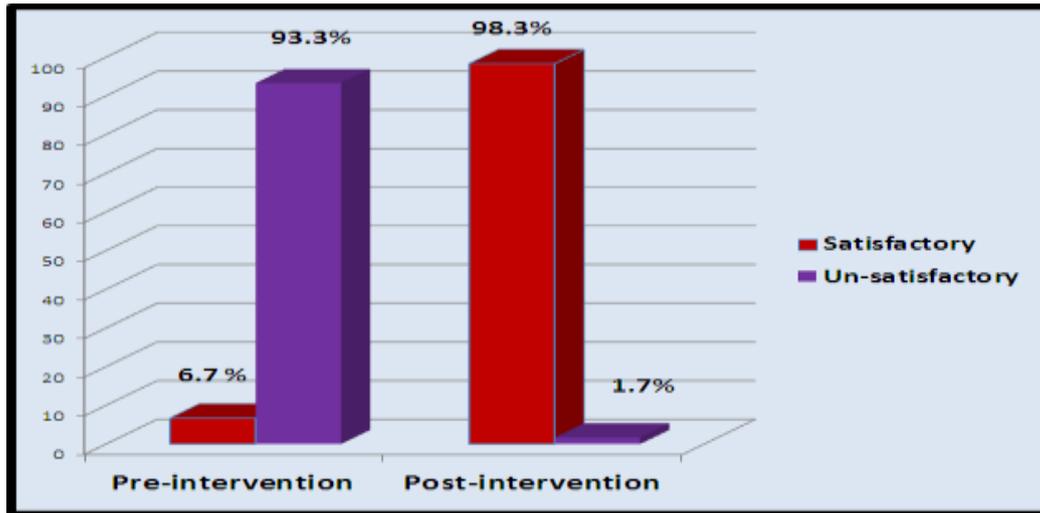


Figure (2): Mothers' knowledge regarding genito-urinary anomalies.

Table (3): Relation between mothers' characteristics and their total knowledge in the pre and post intervention phase

Mothers' knowledge	Total knowledge scores Pre- intervention (n=60)				X ² (P-Value)	Total knowledge scores Post intervention (n=60)				X ² (P-Value)
	Satisfactor y (n=4)		Unsatisfactor y (n=56)			Satisfactor y (n=59)		Unsatisfactor y (n=1)		
	N	%	N	%		N	%	N	%	
Age					14.14					65.669
- 20:<25 years	1	25.0	11	19.6	.0.078	12	20.3	0	0.0	.000**
- 25:<30 years	1	25.0	19	33.9		20	33.9	0	0.0	
- 30:<35 years	0	0.0	12	21.5		12	20.3	0	0.0	
- 35:<40 years	2	50.0	10	17.9		12	20.3	0	0.0	
- ≥ 40 years	0	0.0	4	7.1		3	5.2	1	100.0	
Mothers' educational level					7.09					57.955
- Illiterate	0	0.0	4	7.1	0.131	4	6.8	0	0.0	.000**
- Read and write	0	0.0	8	14.3		8	13.5	0	0.0	
- Primary education	0	0.0	8	14.3		8	13.5	0	0.0	
- Preparatory education	1	25.0	3	5.4		3	5.2	1	100.0	
- Secondary education	2	50.0	22	39.3		24	40.7	0	0.0	
- Above secondary education	1	25.0	11	19.6	12	20.3	0	0.0		
Mothers' work					3.01					38.213
- Housewife	1	25.0	47	83.9	0.556	47	79.7	1	100.0	.000**
- Working	3	75.0	9	16.1		12	20.3	0	0.0	
Residence					3.06					48.613
- Rural	0	0.0	22	39.3	0.216	22	37.3	0	0.0	.000**
- Urban	4	100.0	34	60.7		37	62.7	1	100.0	

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Table (4): Relation between mothers' characteristics and their total practice in the pre and post intervention phase

Mothers' practice	Total practice scores Pre-intervention (n=60)				X ² (P-Value)	Total practice scores Post intervention (n=60)				X ² (P-Value)
	Adequate (n=2)		Inadequate (n=58)			Adequate (n=56)		Inadequate (n=4)		
	N	%	N	%		N	%	N	%	
Age					34.38					44.2
- 20:<25 years	0	0.0	12	20.7	.000**	11	19.6	1	25.0	.000**
- 25:<30 years	0	0.0	20	34.5		19	33.9	1	25.0	
- 30:<35 years	0	0.0	12	20.7		12	21.5	0	0.0	
- 35:<40 years	0	0.0	12	20.7		10	17.9	2	50.0	
- ≥ 40 years	2	100.0	2	3.4		4	7.1	0	0.0	
Mothers' educational level					3.06					27.6
- Illiterate	2	100.0	2	3.4	0.216	4	7.1	0	0.0	.032*
- Read and write	0	0.0	8	13.9		8	14.3	0	0.0	
- Primary education	0	0.0	8	13.9		8	14.3	0	0.0	
- Preparatory education	0	0.0	4	6.9		3	5.4	1	25.0	
- Secondary education	0	0.0	24	41.2		22	39.3	2	50.0	
- Above secondary education	0	0.0	12	20.7		11	19.6	1	25.0	
Mothers' work					6.332					32.7
- Housewife	1	50.0	47	81.0	0.610	47	83.9	1	25.0	.000**
- Working	1	50.0	11	19.0		9	16.1	3	75.0	
Residence					21.7					38.9
- Rural	1	50.0	22	37.9	.007*	22	39.3	0	0.0	.000**
- Urban	1	50.0	37	62.1		34	60.7	4	100.0	

Discussion:

These results found that the majority of children had congenital anomalies of the heart **Mokhtar et al. (2018)** is consistent with These results are also supported by **Mohamed (2019)**, who found that more than one-third of children had genitourinary abnormalities with a family history, and more than two-fifths of fathers had genitourinary abnormalities.

Regarding the relation between maternal demographic characteristics and overall performance, in this study, there is a statistically significant relationship between urogenital maternal demographic characteristics and overall performance. It turned out. There is a statistically significant relationship between course participation and total outcomes for urogenital malformations. These results suggest an existence relationship between the mother's demographic characteristics and her ability to perform.

This result is due to **Parimi & Nitsch (2020)**, who found a very statistically significant relationship between maternal demographic characteristics and overall performance in relation to urogenital malformations. **Lee et al. (2018)** are consistent with the finding that there is no statistically significant relationship between maternal demographic characteristics and overall performance in relation to urogenital malformations.

On the correlation between maternal comprehensive knowledge and their comprehensive practice, the present study showed that there was a statistically significant correlation between maternal comprehensive knowledge and maternal overall performance on urogenital

abnormalities. . This result is likely because there is an existing correlation between maternal comprehensive knowledge and maternal comprehensive performance.

These results found a statistically significant correlation between maternal comprehensive knowledge and maternal overall performance for urogenital abnormalities **Goldsmith et al. (2019)** is consistent with **Nisar et al. (2018)** found no statistically significant correlation between maternal comprehensive knowledge and maternal overall performance of genitourinary abnormalities.

Conclusion:

The majority of the mothers surveyed did not have a statistically significant improvement compared to the pre-intervention stage and had an adequate level of knowledge and competent practice about urogenital abnormalities at the later stage of the intervention. There was also a positive correlation between overall knowledge and practice scores of mothers who studied treatment given to children with genitourinary abnormalities before and after the intervention. There was also a statistically very significant relationship between maternal demographic characteristics and maternal comprehensive knowledge of urogenital abnormalities. On the other hand, there is a statistically very significant relationship between maternal demographic characteristics and maternal overall practice of urogenital abnormalities.

Recommendations:

- Surgical treatment of post-surgical outcome urogenital malformations in children should be provided to improve their mother's knowledge and performance.

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- Periodic assessment for assessment of pediatric complications for urogenital malformations.
- Continuous support should be provided to mothers in connection with the surgical treatment of urogenital malformations.

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تأثير ارشادات ما قبل الجراحة للأمهات علي نتائج ما بعد الجراحة بين أطفالهن الخاضعين لجراحه اصلاح العيوب الخلقية في الجهاز البولي التناسلي

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العيوب الخلقية في الجهاز البولي التناسلي تشمل عيوب في الجهاز البولي والأعضاء التناسلية ، ويمكن التعرف بسهولة على العيوب البولية والتناسلية الخارجية عند الولادة ، ولكن لا يمكن تحديد العيوب الخلقية الداخلية الا عندما تظهر الأعراض والمضاعفات. لذا هدفت هذه الدراسة الي تقييم تأثير ارشادات ما قبل الجراحة للأمهات علي نتائج ما بعد الجراحة بين أطفالهن الخاضعين لجراحه اصلاح العيوب الخلقية في الجهاز البولي التناسلي وتم تنفيذ هذه الدراسة في قسم الجراحة داخل مستشفى بنها التخصصي للأطفال التابع لوزارة الصحة والسكان حيث اشتملت عينة الدراسة على عينة ملائمة من الأطفال الذين يخضعون للإصلاح الجراحي للعيوب الخلقية في الجهاز البولي التناسلي ، حيث كان عددهم (٦٠ أم مع أطفالهن) خلال سته أشهر من بدء الدراسة من أول شهر سبتمبر ٢٠١٩ وحتى نهاية شهر فبراير ٢٠٢٠. حيث أوضحت الدراسة أن هناك دلالات احصائية عاليه بين معلومات وممارسات الامهات تجاه الرعاية المقدمه للأطفال الخاضعين لاصلاح العيوب الخلقية في الجهاز البولي التناسلي بعد تنفيذ التدخلات التمريضيه. كما يوجد ارتباط ايجابي بين معلومات وممارسات الامهات قبل بدء التدخلات التمريضيه وبعد تنفيذ التدخلات التمريضيه . وأوصت الدراسة بأن هناك حاجة إلي التقييم الدوري لتعليم الأمهات فيما يتعلق بالإصلاح الجراحي للعيوب البولية التناسلية على نتائج أطفالهن بعد الجراحة.