Parents' Knowledge and Attitudes toward Testicular Torsion

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ABSTRACT

Background: Any delay in diagnosis, surgical intervention, or referral might irreparably damage the testicles since testicular torsion is an emergency vascular accident brought on by the spermatic cord spinning, which blocks the blood supply to the testis.

Objectives: To assess parents' knowledge and attitudes towards testicular torsion. To assess the relationship between the level of parents' knowledge and their demographic characteristics. To assess the relationship between the level of parents' attitudes and their demographic characteristics.

Methodology: A descriptive (cross-sectional) study was carried out during a period starting from February to April 2023. A probability simple–random sample including (106) participants including the teaching staff, employees, and married students participated in the study. Data were analyzed through the use of the statistical package of Social Sciences (SPSS) version 26.

Results: Overall, all assessment of the knowledge of respondents towards TT was fair, and overall, all assessment of the attitudes of respondents towards TT was good.

Conclusion: Parents' knowledge toward TT was fair regarding identifying the condition but it was very poor regarding identifying the time frame in which TT must be managed and the age group most affected by TT. Parents' attitudes towards TT were very good, especially regarding the belief that it is an urgent condition.

Keywords: Knowledge, Attitudes, Testicular Torsion

INTRODUCTION

Any delay in diagnosis, surgical intervention, or referral might irreparably damage the testicles since testicular torsion is an emergency vascular accident brought on by the spermatic cord spinning, which blocks the blood supply to the testis[1].Depending on how long the spermatic cord has been torted and how far it has rotated, the testicular ischemia will vary in severity[2].One of the most common pediatric urological problems necessitates quick action. According to estimates, there are 3.8 cases of TT per 100,000 boys under the age of 18 per year[3] .The uropathology of testicular torsion is time sensitive. Increased rates of testicular loss may result from any delay in presentation, care, or referral. Generally speaking, testicular torsion treated within 6 hours after the beginning of symptoms results in approximately 90% to 100% testicular salvage, between 6 and 12 hours results in about 50% testicular salvage, and between 12 to 24 hours only about 10% of testes may be rescued[2,4] .Traditionally, a history and physical examination are used to diagnose testicular torsion. Testicular torsion pain often starts suddenly, as in acute vascular accidents, and is followed by nausea, vomiting, and scrotal edema[5] .Torsion's degree and duration can affect how abrupt onset scrotal or abdominal pain manifests, though[6] .Characteristic physical examination findings include a high riding testis with an abnormally horizontal orientation, a thicker cord, and an absence of the ipsilateral cremasteric reflex[2,4] . Testicular torsion, to prevent the loss of the testes permanently, it must be detected within 4 to 8 hours and treated surgically; after this time, the kid will experience decreased fertility and a high orchiectomy rate. 42% of males with testicular torsion who presented late reportedly received orchiectomy[7,8] . In 86% of cases, aberrant semen analysis led to the observation of decreased fertility[9] . Parents need to be aware of the impact orchiectomy has on males since it is serious and cannot be disregarded. An estimated 96% of parents whose kids had acute scrotal pain believe that more people need to be aware of this condition[10]. Urological conditions that need immediate attention include testicular torsion. Any delay in the patient's presentation, treatment, or referral may increase the risk of testicular loss. Generally, testicular torsion treated within 6 hours after the onset of symptoms leads to approximately 90% to 100% testicular salvage, between 6 and 12 hours results in around 50% testicular salvage, and within 12 to 24 hours only about 10% of testes can be saved[2,4].This frequent pediatric urological emergency requires quick action. According to estimates, there are 3.8 testicular torsion cases per 100,000 males under the age of 18 per year[3].

METHODOLOGY

A descriptive (cross–sectional) study was carried out during a period starting from February to April 2023. The study was carried out at the College of Nursing at University of Basrah including the teaching staff, employees, and married students all of whom had children. A probability simple-random sample including (106) participants including the teaching staff, employees, and married students participated in the study. A structured questionnaire is reconstructed through an extensive

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review of relevant literature with some modifications of the details. The questionnaire mainly consisted of three parts. A panel of seven experts has established the content validity for the tool's assessment (Appendix A). These experts were given copies of the research instrument to analyze the questionnaire's content, and they were requested to review and assess the instrument for its clarity and suitability. The researcher followed all advice from industry professionals. After considering all of the feedback and suggestions, some things were removed and others were added. Data collection was performed through the use of the study instrument. The implementation was carried out at Basra Nursing College from February 2023 till April 2023. All participants were informed of the study's goals before the data were collected. For each question (in knowledge & attitudes) that was answered by yes, no, or not sure three points were given for yes, two for not sure and one for no, with the highest M.S of three and the lowest being one a Likert scale was used to determine the evaluation of each participant answers [poor (1-1.67), fair (1.67- 2.34), good (2.34-3)]. Analysis was made by using SPSS (Statistical Package for Social Science) version 26 data was expressed in (frequency and percentage). The level of significance was measured by using the Chi-square test.

RESULTS

Table 1: Sociodemographic Information of the Study Participants

Variable	Variable subcategory	Frequency	Percentage
Age	20-29	30	28.3%
	30-39	34	32.07%
	40-49	32	30.1%
	50-59	10	9.4%
Gender	Male	65	61.3%
	Female	41	38.6%
Marital status	Single	0	0%
	Married	103	97.1%
	Divorced	2	1.8%
	Widowed	1	0.9%
Educational level	Primary school	4	3.7%
	High school	23	21.6%
	Diploma	33	31.1%
	Bachelor degree	30	28.3%
	Master degree	13	12.2%
	Ph. D	3	2.8
Occupation	Instructor	12	11.3%
	Employee	30	28.3%
	Student	64	60.3%
	Total	106	100%

The current study included 106 parents in College of Nursing at University of Basrah, (table 1) shows that parents' age group (30-39) represents (32.07%) and the majority of parents in this study are males (61.3%), the results also showed that (97.1%) are married and for the educational level the most had diploma (31.1%), and finally for occupation, (60.3%) were students.

Table 2: Knowledge of Testicular Torsion Among Respondents

Question	Answer	Frequency	Percentage
Have you heard of TT Before?	Yes	54	50.9%
	No	44	41.5%
	Not sure	8	7.5%
	Total	106	100%
Do you know the signs & symptoms of this condition?	Yes	30	28.3%
	No	62	58.4%
	Not sure	14	13.2%
	Total	106	100%
Ultrasound is significant in the diagnosis process.	Yes	70	66.03%
	No	14	13.2%
	Not sure	22	20.7%
	Total	106	100%
Time is a crucial element in the management of TT.	Yes	50	47.1%
	No	24	22.6%
	Not sure	22	20.7%
	Total	106	100%

Table (2) reported that (50.9%) of parents have previously heard of TT while (39.6%) knew the meaning of TT, and (28.3%) knew the signs & symptoms of the condition. And regarding the use of ultrasound in the diagnosis process (66.03%) of parents answered yes, and (47.1%) of parents knew that time is a crucial element in managing TT.

Regarding the knowledge of respondents to the age group most affected by TT as shown in table [2] (16.9%) selected birth to four years while (13.2%) selected 4-12 years and the majority of respondents answered with I don't know (56.6%).

Table (2) shows the answers of parents to the time frame in which TT must be managed as only (9.4%) answered six hours. And (5.6%) while the majority answered with any time (73.5%). Table (4.2.4) shows the knowledge of parents of the most significant cause of TT as (10.3%) said that it is direct trauma to the testicle while (5.6%) chose genetic factors and (1.8%) chose testicular rapid growth during puberty with the majority of (58.4%) chose I don't know.

Regarding Table (2) which shows the respondents' answers to their source of information about TT, (18.8%) chose the physician (8.4%) chose social media, and (55.6%) chose I Don't Know.

Table 3: Attitudes Towards Testicular Torsion Among Respondents

Question	Answer	Frequency	Percentage
Do you think that TT is an emergency?	Yes	79	74.5%
	No	9	8.4%
	Not sure	18	16.9%
	Total	106	100%
Do you think that TT causes severe pain in the testicle?	Yes	76	71.6%
	No	12	11.3%
	Not sure	18	16.9%
	Total	106	100%
Do you think that TT can cause testicular damage or death?	Yes	50	47.1%
	No	21	19.8%
	Not sure	35	33.01%
	Total	106	100%
Do you think that TT requires surgical intervention?	Yes	80	75.4%
	No	8	7.5%
	Not sure	18	16.9%
	Total	106	100%
Do you think that TT can cause infertility?	Yes	64	60.3%
	No	9	8.4%
	Not sure	33	31.1%
	Total	106	100%
Do you think that orchiectomy is a possible outcome of TT?	Yes	28	26.4%
	No	38	35.8%
	Not sure	40	37.7%
	Total	106	100%

Table (3) shows the attitudes of respondents towards TT where (74.5%) Believe that TT is an emergency while only (8.4%) don't, also (47.1%) believe that TT causes testicular death and regarding if TT requires surgical intervention (75.4%) answered yes while for those who believe that orchiectomy is a possible outcome, it was (26.4%).

Table 4: Overall Assessment of Knowledge of Respondents towards TT

Classification	Frequency	Percentage	M.S	Assessment
GOOD	48	45.2%	1.92	Fair
FAIR	10	9.4%		
POOR	48	45.2%		
TOTAL	106	100%		

Table (4) shows the overall all assessment of knowledge of respondents towards TT, where (45.2%) had good knowledge, (9.4%) had fair knowledge, and (45.2%) had poor knowledge with an average M.S of (1.92) having a fair knowledge according to the Likert scale.

Table 5: Overall Assessment of Attitudes of Respondents towards TT

Classification	Frequency	Percentage	Mean of Score	Assessment
GOOD	58	54.7%	2.38	Good
FAIR	36	33.9%		
POOR	12	11.3%		
TOTAL	106	100%		

Table (5) shows the overall all assessment of the attitudes of respondents towards TT, where (54.7%) had good attitudes, (33.9%) had fair attitudes, and (11.3%) had poor attitudes with an average M.S of (2.38) having a good attitude according to the Likert scale.

Table 6: Correlation Between Sociodemographic Characteristics of the Study Participants and Overall Assessment of Knowledge Of Respondents towards TT

Variable	Variable subcategory	Knowledge			Sig.
		Good	Fair	Poor	
Age	20-29	11	2	17	p-value (10.183) d.f=6 NS
	30-39	19	3	12	
	40-49	17	4	11	
	50-59	1	1	8	
Gender	Male	29	6	30	p-value (0.0509) d.f= 2 NS
	Female	19	4	18	
Marital status	Single	0	0	0	p-value (14.89) d.f=6 S
	Married	48	8	47	
	Divorced	0	1	1	
	Widowed	0	1	0	
Educational level	Primary school	0	0	4	p-value (32.903) d.f = 10 S
	High school	2	3	18	
	Diploma	19	6	8	
	Bachelor degree	15	1	14	
	Master degree	9	0	4	
	Ph. D	3	0	0	
Occupation	Professor	9	1	2	p-value (7.894) d.f=4 N.S
	Employee	15	4	11	
	Student	24	5	35	

Table (6) shows the correlation between Sociodemographic characteristics of the study participants and the overall assessment of knowledge towards TT, as it's significant for educational level (p-value 32.903>18.307) and marital status (p-value14.89>12.592), and not significant for age group (p-value 10.183<12.592), gender (p-value 0.0509< 5.991) and occupation (p-value 7.894< 9.488) using chi-square test for evaluation at 0.05 level.

Table 7: Correlation between Sociodemographic information of the study participants and Overall assessment of attitude of respondents towards TT

Variable	Variable subcategory	Attitude			Sig.
		Good	Fair	Poor	
Age	20-29	18	9	3	p-value (1.772) d.f = 6 NS
	30-39	19	12	3	
	40-49	17	11	4	
	50-59	4	4	2	
Gender	Male	42	15	8	p-value (9.019) df=2 S
	Female	16	21	4	
Marital status	Single	0	0	0	p-value (6.141) df = 6 NS
	Married	58	34	11	
	Divorced	0	1	1	
	Widowed	0	1	0	
Educational level	Primary school	0	1	3	p-value (42.232) df= 10 S
	High school	10	11	2	
	Diploma	20	8	5	
	Bachelor degree	14	14	2	
	Master degree	11	2	0	
	Ph. D	3	0	0	
	Professor	9	2	1	p-value (18.183) d.f = 4 S
Occupation	Employee	7	19	4	
	Student	42	15	7	

Table (7) shows the correlation between the Sociodemographic characteristics of the study participants and the overall assessment of attitudes towards TT, as it's significant for educational level (p-value 42.232>18.307) gender (p-value 9.019> 5.991) and occupation (p-value 18.183>9.488), and not significant for age group (p-value 1.772<12.592) and material status (p-value 6.141<12.592) using the chi-square test for evaluation at 0.05 level.

DISCUSSION

The uropathology of testicular torsion is time sensitive. Increased rates of testicular loss may result from any delay in presentation, care, or referral. Typically, testicular torsion treated within 6 hours after the beginning of symptoms results in approximately 90% to 100% testicular salvage, between 6 and 12 hours results in about 50% testicular salvage, and between 12 to 24 hours only about 10% of testes may be saved[2,4].In urology and ear, nose, and throat (ENT) clinics, Friedman et al. examined the parent knowledge of TT. In the urology and ENT clinics, they discovered no statistically significant difference in the parents' knowledge of TT (34.2 vs. 35.6%)[11,12]. Our study showed a noticeable finding as 50.9% (Table 4.2.1) have heard of TT before, The parents in this study who knew about TT gained their

knowledge mostly through the physician (18.8%) .while Friedman *et al* showed that the source of information was mostly from a relative or a friend (35.4%) and pediatrician (17.1%) , Friday E.Ogbetere assessed the level of knowledge among healthcare workers in Auchi, Nigeria his results showed that 88.5% had heard of TT and 78.2% knew the meaning of TT[13]. Our study also showed that although 39.6% knew the meaning of TT, 58.4% [Table 4.2.1] failed to identify the signs and symptoms and only 9.4% [Table 4.2.3] identified the time frame in which TT must be managed correctly, though 47.1% (Table 4.2.1) agreed that time is a crucial element in the management of TT[14-24].Testicular torsion can occur at any stage of life, although it commonly does so shortly after birth or between the ages of 12 and 18, with a peak in incidence at 13 to 14 years old[25]. Males under the age of 25 experience torsion about 1 in 4000 times.

CONCLUSION

1. **Parents' knowledge towards TT was fair regarding identifying the condition but it was very poor regarding identifying the time frame in which TT must be managed and the age group most affected by TT.**
2. **Parents' attitudes towards TT were very good, especially regarding the belief that it is an urgent condition.**
3. **The correlation between sociodemographic characteristics of study participants on the overall assessment of knowledge towards TT showed no obvious significance except for marital status and educational level.**
4. **The correlation between the Sociodemographic characteristics of study participants and the overall assessment of attitudes towards TT showed significance except for age and marital status.**

RECOMMENDATIONS

1. Conducting parent education sessions: Organizing parent education sessions or workshops focused on child health topics, including testicular torsion. These sessions can be held in healthcare settings, community centers, or schools. Use presentations, interactive discussions, and Q&A sessions to address parents' questions and concerns.

2. Working closely with pediatricians and primary care providers to ensure consistent messaging and education about testicular torsion. Provide them with resources and updates to keep them informed, enabling them to effectively communicate with parents during their visits.

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