RESULTS

The findings of the current study were presented under the following five parts:

- The first part dealt with sociodemographic characteristics of nurses who participated in the current study (Table 1, Figures 1, 2).
- The second part included nurses' knowledge about intestinal obstruction in children (Tables 2, 3, 4, 5, 6 & Figure 3).
- The third part concerned with nurses' performance regarding pre and postoperative care in children (Tables 7, 8, 9, 10, 11, 12, 13, 14& Figures 4, 5).
- The fourth part represented comparison of mean scores of nurses' knowledge and performance according to their some sociodemographic characteristics (Tables 15, 16, 17, 18).
- Finally, the fifth part represented the relationship between the mean scores of nurses' knowledge and performance and their some sociodemographic characteristics (Table19).

Results

The findings of the current study were presented in the following five parts:

Part I: Socio-demographic Characteristics of Nurses

This part represented the characteristics of nurses in relation to their age, level of education, current job title, years of experience, and training programs about care of children with surgical problems.

Table (1):Percentage distribution of nurses'seciodemographic characteristics (n=56)

Items	No	%
Level of education		
Bachelor degree in nursing	15	26.8
Technical Institute of Nursing	4	7.1
Diploma of Nursing	37	66.1
Current job title		
Head nurse	19	33.9
Staff nurse	37	66.1
Years of experience in pediatric nursing care		
5 –7 years	16	28.6
≥7 years	40	71.4
Means±SD7.73±1.48		
Years of experience in caring of children in pediatric surgical department		
3- less than 5 years	11	19.6
5 – less than 7 years	11	19.6
≥7 years	34	60.7
Means±SD6.25 ± 1.89		
Training courses about care of children with surgical problems		
Yes	38	67.9
No	18	32.1

Table (1) revealed that, nearly two thirds of nurses (66.1%) in the current study were graduated from diploma nursing school. Apparently, the same table showed that, 66.1% of nurses were working as staff nurse. The highest percentage of nurses (71.4%) had experience in caring for children ranged from 5 to less than 7 years. However, more than two thirds of nurses (67.9%) attended training courses about nursing care for children with surgical problems.

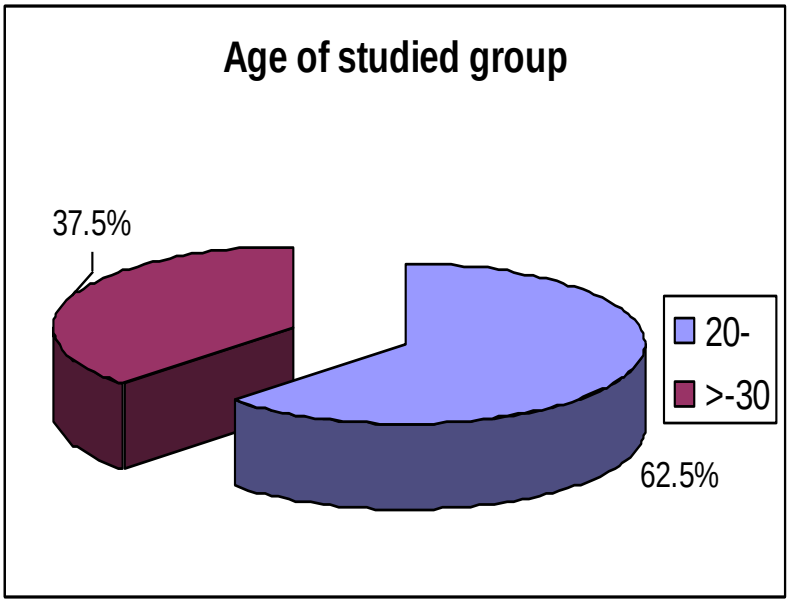
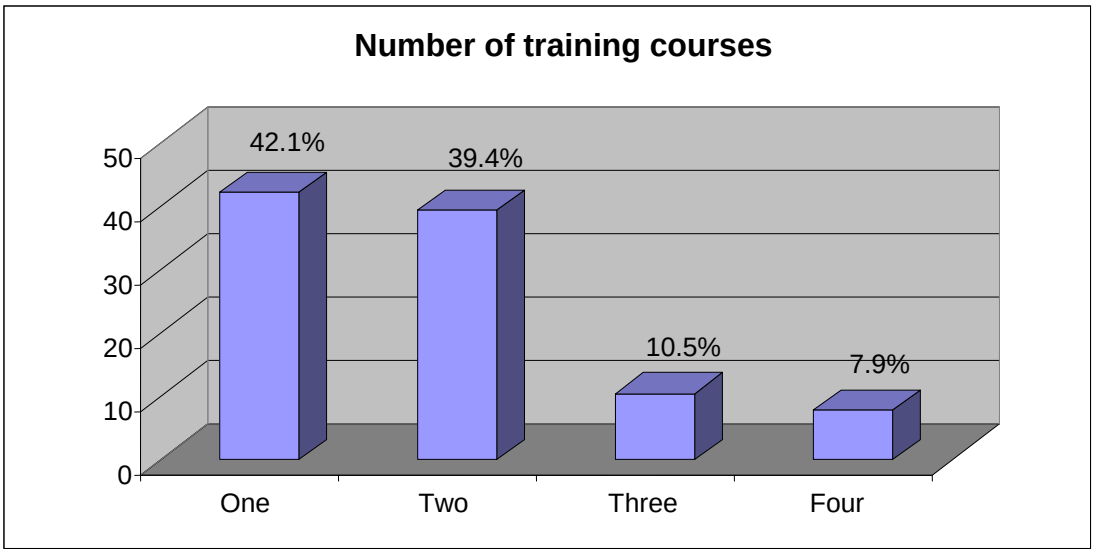


Figure (1): percentage distribution of nurses' age

It is clear from figure (1) that, the highest percentage (62.5%) of nurses age ranged from 20 to less than 30 years old.

Figure (2):Percentage distribution of nurses regarding types oftraining courses



It is clear from figure (2) that, the relatively high percentage of nurses (42.1%) attended only one training course in relation to care for child with surgical problems.

Part II: Nurses' knowledge about intestinal obstruction pre-and post-operative care

Table (2): Nurses'knowledge about intestinal obstruction in percentage distribution (n = 56)

Items	Good		Fair		Poor		X^2	P value
	No.	%	No.	%	No.	%		
Definition	9	16.1	7	12.5	40	71.4	36.67	0.000
Types	3	5.4	14	25.0	39	69.6	36.46	0.000
Causes	7	12.5	10	17.9	39	69.6	33.46	0.000
Sign and Symptoms	1	1.8	13	23.2	42	75.0	47.60	0.000
Complication	8	14.3	0	0	48	85.7	28.57	0.000
Sign and Symptoms of peritonitis	6	10.7	5	8.9	45	80.4	55.75	0.000
Symptoms of shock	12	21.4	0	0	44	78.6	18.28	0.000
Diagnostic evaluation	12	21.4	4	7.2	40	71.4	38.28	0.000

Table (2) proved that, the maximum percentages of nurses had poor level of knowledge regarding definition, types, causes, signs and symptoms and diagnosis of I.O.in children (71.4%, 69.6%, 69.6%, 75% & 71.4% respectively). While, the majority of them (85.7% & 80.4% respectively) had poor level of knowledge regarding complications of I.O. and signs and symptoms of shock. The same table illustrated that, there were highly statistically significant difference among nurses levels of knowledge ($P \leq 0.001$)

Table (3): Nurses'knowledge regarding preoperative nursing care in percentage distribution (n = 56)

Items	Good		Fair		Poor		X^2	P value
	No.	%	No.	%	No.	%		
Definition of preoperative care	17	30.4	0	0.0	39	69.6	8.64	0.003
Importance of preoperative care	8	14.3	7	12.5	41	73.2	40.10	0.000
Basic nursing care	8	14.3	7	12.5	41	73.2	40.10	0.000
Importance of measuring vital signs	13	23.2	0	0.0	43	76.8	16.07	0.000
Reasons for measuring the vital signs	7	12.5	6	10.7	43	76.8	47.60	0.000
Basic vital signs	14	25.0	0	0.0	42	75.0	14.00	0.000
Diseases that prevent surgery	5	8.9	8	14.3	43	76.8	47.82	0.000
Laboratory tests	10	17.9	0	0.0	46	82.1	23.14	0.000

Table (3) revealed that, the maximum percentages of nurses had poor level of knowledge regarding definition of preoperative care, importance of preoperative care,basic nursing care, importance of measuring vital signs, why measure the vital signs, basic vital signs, diseases that prevent surgery (69.6%, 73.2%, 73.2%, 76.8%, 76.8, 75%& 76.8% respectively). On the same line, the majority of nurses (82.1%) had poor level of knowledge regarding laboratory tests.There were highly statistically significant differences among nurses' knowledge of preoperative care($P \leq 0.001$)

Table (4): Nurses' knowledgeabout immediate post operative care inpercentage distribution(n = 56)

Items	Good		Fair		Poor		X^2	P value
	No.	%	No.	%	No.	%		
Maintain the airway opening	13	23.2	0	0.0	43	76.8	16.07	0.000
Check child's level of consciousness	15	26.8	0	0.0	41	73.2	12.07	0.001
Measure vital sings	15	26.8	0	0.0	41	73.2	12.07	0.001
Observe any tubes for child	9	16.1	0	0.0	47	83.9	25.78	0.000
Observe any bleeding	11	19.6	0	0.0	45	80.4	20.64	0.000
Monitor medication	25	44.6	0	0.0	31	55.4	.643	0.423
Assess the child's pain	9	16.1	0	0.0	47	83.9	25.78	0.000
Input/output charting	13	23.2	0	0.0	43	76.8	16.07	0.000
Report any complications	8	14.3	0	0.0	48	85.7	28.57	0.000

*only two answer

Table (4) illustrated that, the majority of nurses had poor level of knowledge regarding care for connected tubes,monitoring bleeding,assessment of the child's pain and report any complications (83.9%, 80.4%, 83.9% &85.7% respectively). While, an equal percentages of nurses 76.8% had poor level of knowledge regarding maintaining the airway opening and monitoring child's input/output. An equal percentages of nurses (73.2%) had poor level of knowledge regarding checking child's level of consciousness and measuring vital signs. More than half of nurses (55.4%)had poor level of knowledge regarding monitoring medication.There were highly statistically significant differences among all the above mentioned items regarding immediate post-operative nursing care ($P \leq 0.001$)

Table (5): Nurses'knowledge regarding nursing care in the days following the surgery in percentage distribution (n=56)

Items	Good		Fair		Poor		X^2	P value
	No.	%	No.	%	No.	%		
Basic post operative care in the day following the surgery	8	14.3	7	12.5	41	73.2	40.107	0.000
Measure vital signs	21	37.5	0	0.0	35	62.5	3.500	0.061
Monitor of child's awareness	15	26.8	0	0.0	41	73.2	12.07	0.001
Check color of skin	8	14.3	0	0.0	48	85.7	28.57	0.000
Observe bleeding	11	19.6	0	0.0	45	80.4	20.64	0.000
Assess and manage child's pain	9	16.1	0	0.0	47	83.9	25.78	0.000
Monitor signs of infection	15	26.8	0	0.0	41	73.2	12.07	0.001
Observe other signs	8	14.3	0	0.0	48	85.7	28.57	0.000
Ensure safety of the child	12	21.4	0	0.0	44	78.6	18.28	0.000
Prevent complications	15	26.8	0	0.0	41	73.2	12.07	0.001
Frequent of measuring vital signs	11	19.6	0	0.0	45	80.4	20.64	0.000
Change child's position	17	30.4	0	0.0	39	69.6	8.643	0.003
Causes of change position	7	12.5	6	10.7	43	76.8	47.60	0.000
Follow doctor order	10	17.9	0	0.0	46	82.1	23.143	0.000
Type of antiseptic solution	11	19.6	0	0.0	45	80.4	20.64	0.000
Using sterile equipment	9	16.1	0	0.0	47	83.9	25.78	0.000
Principles of wound care	15	26.8	4	7.1	37	66.1	30.25	0.000

Table (5) indicated that, the majority of nurses (85.7%, 80.4%, 83.9%, 85.7%, 80.4%, 82.1, 80.4%, and 83.9% respectively)had poor level of knowledge regarding check child's color of skin, observe bleeding, assessment of child's pain, observe other signs, frequency of measuring vital signs, follow doctor orders, type of antiseptic and using of sterile equipment. Also it showed that, more than three quarters of nurses (78.6% and 76.8% respectively) had poor level of knowledge regarding ensuring safety of the child and causes of change child's position.

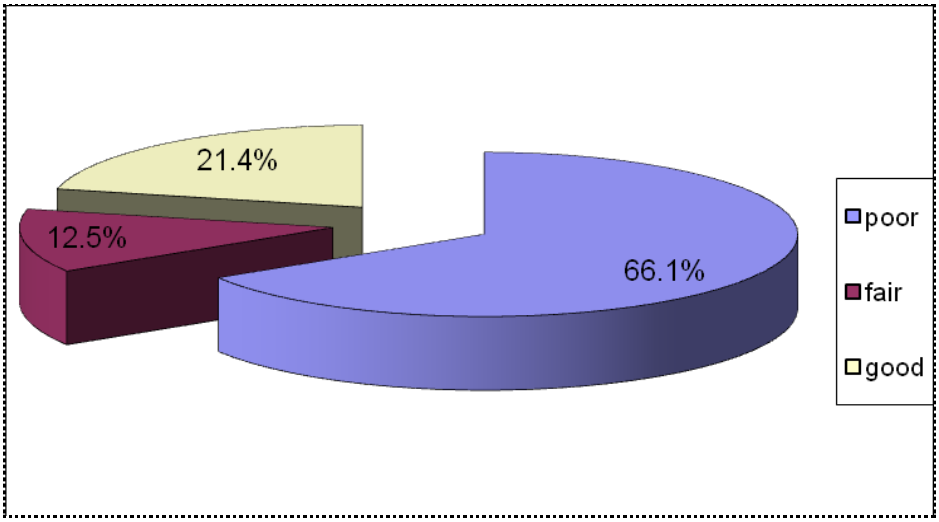
More than two third of nurses (73.2% and69.6% respectively) had poor level of knowledge regarding basic post operative care in the day following the surgery, monitor of child's awareness, monitor signs of infection and prevention of complications. There were highly statistically significant differences among all the above mentioned items regarding nursing care in the days following the surgery. Meanwhile, there was no statistically significant differenceregarding nurses' knowledge aboutmeasuring vital signs.

Table (6): Percentage distribution of nurses in relation to theirtotal knowledge score levels (n=56)

Items	Good		Fair		Poor		X^2	P
	No.	%	No.	%	No.	%		
Information about disease	9	16.1	11	19.6	36	64.3	24.250	0.000
Preoperative care	13	23.2	6	10.7	37	66.1	28.321	0.000
Immediate care after surgery	9	16.1	5	8.9	42	75.0	44.179	0.000
General observation and caring in day following surgery	9	16.1	12	21.4	35	62.5	21.679	0.000
Total knowledge	**12**	**21.4**	**7**	**12.5**	**37**	**66.1**	**27.679**	**0.000**
Means±SD	**29.44±17.55**							

Table (6) indicated that, nearly two thirds (66.1%) of nurses had poor level of knowledge regarding to information about disease, pre-operative care, immediate care after surgery and general observation and caring in day following surgery. The mean of total knowledge score of nurses were29.44±17.55, there were highly statistically significant differences among nurses total knowledge score levels($P \leq 0.001$)

Figure (3):Percentage distribution of nurses in relation to theirtotal knowledge (n=56)



It is clear from figure (3) that,about two thirds (66.1%) of nurses had poor total knowledge about intestinal obstruction in children.

Part III: Nurses performance during pre-and post operative periods

Table (7): Nurses' performance related togeneral preoperative nursing care in percentage distribution (n=56)

Items	Done		Not done		X^2	P value
	No.	%	No.	%		
1- Verify that identification band corroborates with child and family statement and chart documentation	19	33.9	37	66.1	5.786	0.016
2- Assess and check laboratory values	10	17.9	46	82.1	23.143	0.000
3- Confirm that all required consent forms are completed	20	35.7	36	64.3	4.571	0.033
4-Chart current vital signs	12	21.4	44	78.6	18.286	0.000
5- Document current height and weight	11	19.6	45	80.4	20.643	0.000
6- Document any changes before surgery	16	28.6	40	71.4	10.286	0.001
7-Ensure child's fasting as doctor order	21	37.5	35	62.5	3.500	0.061
8- Check and remove any metal	17	30.4	39	69.6	8.643	0.003
9- Administer any prescribed medication	18	32.1	38	67.9	7.143	0.008
10-Provide skin preparation	10	17.9	46	82.1	23.143	0.000
11-Assess family for knowledge about pre-operative care.	4	7.1	52	92.9	41.143	0.000
12- Assess child for fear and anxiety	6	10.7	50	89.3	34.571	0.000
13- Assess family knowledge about post operative care	0	0.0	56	100.0	-	-
14- Provide explanation of preoperative activities and expectations	6	10.7	50	89.3	34.571	0.000
15- Encourage child to cough and deep breathing and mobility	9	16.1	47	83.9	25.786	0.000
16- Provide the family with education and information about pain control measures	10	17.9	46	82.1	23.143	0.000

Table (7) indicated that, the vast majority of nurses (92.9%) don't assess family knowledge before surgery. On the same line, 89.3% of them don't provide explanation to the parents about pre-operative activities and expectations. All nurses (100%) don't assess family knowledge of post operative care provided for their children. However, 37.5% of nurses' ensured child's fasting before surgery at the right time. There were a highly statistically significance difference between all items relation to nurses level of performance ($P \leq 0.001$)

Table (8): Nurses'performance regarding post operative care in percentage distribution (n = 56)

Items	Done		Not done		X^2	P value
	No	%	No	%		
1-Receive child from operating room by herself.	21	37.5	35	62.5	3.500	0.061
2-Check airway (rate& depth) of breathing	14	25.0	42	75.0	14.000	0.000
3-Place child in position of comfortable position	10	17.9	46	82.1	23.143	0.000
4-Hang I.V apparatus as doctor order	26	46.4	30	53.6	0.286	0.593
5-Assess level of consciousness	14	25.0	42	75.0	14.00	0.000
6-Measure the vital signs every 15 min, for the first hours after surgery and then every 30 min.	11	19.6	45	80.4	20.64	0.000
7-Check incision area	12	21.4	44	78.6	18.28	0.000
8- Check signs of infection	19	33.9	37	66.1	5.786	0.016
9-Administer I.V infusion and medications as ordered	17	30.4	39	69.6	8.643	0.003
10-Encourage child for moving and early mobilization	0	0.0	56	100.0	-	-
11- Observe signs of dehydration	14	25.0	42	75.0	14.000	0.000
12- Encourage child to drink as ordered	23	41.1	33	58.9	1.786	0.181
13-Offer diet as prescribed	18	32.1	38	67.9	7.143	0.008
14- Measure all sources of fluids intake and output	12	21.4	44	78.6	18.286	0.000
15- Arrange the time of nursing care and child-family teaching	4	7.1	52	92.9	41.143	0.000

Table (8) indicated that, the vast majority of nurses (92.9%) don't arrange the time of nursing care and child-family teaching.On the same line,80.4 % of them don't measure the vital signs every 15 min. All nurses (100%) don't encourage child for moving and early mobilization.However,46.4% of nurses hang I.V apparatus as doctor order. There were statistically significance differences in all items except hang IV and encourage child to drink.

Table (9): Nurses'performance related to wound care inpercentage distribution (n = 56)

Items	Done		Not done		X^2	P value
	No.	%	No.	%		
1-Checked physician's orders for the dressing	27	48.2	29	51.8	.071	0.789
2-Wash the hands	19	33.9	37	66.1	5.786	0.016
3-Gather the necessary equipment	18	32.1	38	67.9	7.143	0.008
4-Explain and discuss the procedure to the child or family	4	7.1	52	92.9	41.143	0.000
5- Prepare the environment and keep privacy	22	39.3	34	60.7	2.571	0.109
6- Place sterile supplies on the over bed table	6	10.7	50	89.3	34.57	0.000
7-Open sterile packages and place on sterile field	8	14.3	48	85.7	28.571	0.000
8-Put on clean gloves	23	41.1	33	58.9	1.786	0.181
9- Remove tape slowly by pulling tape toward wound	19	33.9	37	66.1	5.786	0.016
10- Remove soiled dressings, note presence of any discharge	4	7.1	52	92.9	41.14	0.000
11- Remove clean gloves and wash hands	4	7.1	52	92.9	41.14	0.000
12-Put on sterile gloves	4	7.1	52	92.9	41.14	0.000
13- Clean the incision area with swabs soaked in antiseptic solution as doctor's orders	6	10.7	50	89.3	34.57	0.000
14- Clean the incision from inner to outer using the swab only once	19	33.9	37	66.1	5.786	0.016
15-Remove gloves and then secure the wound	4	7.1	52	92.9	41.14	0.000
16- Return the child in comfortable position	22	39.3	34	60.7	2.571	0.109
17-Dispose soiled materials in appropriate container	19	33.9	37	66.1	5.78	0.016
18- Wash hands thoroughly	19	33.9	37	66.1	5.786	0.016
19-Report the condition of wound	19	33.9	37	66.1	5.786	0.016

Table (9) demonstrated that, an equal percentages of nurses (92.9%) don't explain and discuss the procedure to the child or family,remove soiled dressings, note presence of any discharge, remove clean gloves and wash hands, put on sterile gloves and don't remove gloves and then secure the wound. The table also showed that, 89.3% of nurses don'tplace sterile supplies on the over bed table and don't clean the incision area with swabs soaked in antiseptic solution as doctor's orders (according direction). However,41.1% of nurses put on clean gloves. There was highly statistically significance difference in all previously mentioned items.

Table (10): Nurses'performance regarding toadministration of IV infusion and medications in percentage distribution (n=56)

Items	Done		Not done		X^2	P
	No	%	No	%		
1-Gather the needed equipment	22	39.3	34	60.7	2.571	0.109
2-Check I.V solution and medication as order	22	39.3	34	60.7	2.571	0.109
3-Examine the solution for character of solution	19	33.9	37	66.1	5.786	0.016
4- Wash hands	0	0.0	56	100.0	-	-
5- Explain the procedure to child or family	3	5.4	53	94.6	44.64	0.000
6- Wear the gloves	3	5.4	53	94.6	44.643	0.000
7- a)Maintain aseptic technique	19	33.9	37	66.1	5.786	0.016
b)Clamp tubing,	19	33.9	37	66.1	5.786	0.016
c)Squeeze drip chamber and allow it to fill at least half way	56	100.0	0	0.0	-	-
d) Allow fluid to move through tubing until all bubbles have disappeared	56	100.0	-	-	-	-
e) Close clamp and cover the end of tubing to maintain sterility of set up	19	33.9	37	66.1	5.786	0.016
8-Monitor I.V site patency	19	33.9	37	66.1	5.786	0.016
9- Place I.V set to child's I.V site after remove the cover of connula	19	33.9	37	66.1	5.786	0.016
10- Open the clamp and regulate I.V flow according to physician order	19	33.9	37	66.1	5.786	0.016
11- Inspect of I.V site regularly during administration	19	33.9	37	66.1	5.786	0.016
12- Inspect circulatory overload by monitor intake and output during I.V therapy	19	33.9	37	66.1	5.786	0.016
13- Document any complications of therapy	19	33.9	37	66.1	5.786	0.016

Table (10) revealed that, vast majority of nurses (94.6%) don't explain the procedure to child or family and don't wear the gloves. All nurses (100%) don't wash hands. However, 100% of nurses squeeze drip chamber and allow it to fill at least half way and allow fluid to move through tubing until all bubbles have disappear. There was no statistically significance different in gather the needed equipment. Meanwhile,there was highly statistically significance different regarding to nurses performance about explaining the procedure to the child or family and wear the gloves.

Table (11): Nurses' performance as regards hand washing inpercentage distribution(n = 56)

Items	Done		Not done		X^2	P value
	No	%	No	%		
1-Gathers appropriate equipment	19	33.9	37	66.1	5.786	.016
2- Removes rings, if possible	19	33.9	37	66.1	5.786	.016
3- Removes watch or pushes watch up	9	16.1	47	83.9	25.786	.000
4- Turns on faucet with a dry paper towel	0	0.0	56	100.0	------	-----
5-Wets hands. Keeps fingertips pointed downward at all times so water runs off fingertip	56	100.0	0	0.0	------	------
6- Applies adequate amount of soap (about 1 teaspoon) to hands	56	100.0	0	0.0	------	------
7- Lathers soap over hands and wrists between fingers and under rings. Interlaces fingers. Washes hands for 15 to 20 sec.	19	33.9	37	66.1	5.786	.016
8- Uses an orange stick to clean under fingernails if needed	3	5.4	53	94.6	44.643	.000
9 Rinses hands well with fingertips pointed downward so water runs off fingertips.	19	33.9	37	66.1	5.786	.016
10-Dries hands and wrists thoroughly with clean paper towels.	19	33.9	37	66.1	5.786	.016
11-Turns off the faucets with a clean, dry paper towel. Discards the paper towel into the trash	19	33.9	37	66.1	5.786	.016
12) If needed, applies lotion to hands	0	0.0	56	100.0	------	-----

Table (11) revealed that, vast majority of nurses (94.6%) don't uses an orange stick to clean under fingernails. All nurses (100%) don't turn on faucet with a dry paper towel and don't apply lotion to hands. In addition, all nurses (100%)wet their hands,keep fingertips pointed downward at all times so water runs off fingertip and applies adequate amount of soap.However, this table reflects that statistically significance difference of some items related to nurses' performance level toward hand wash.

Table (12): Nurses performance related to psychological support for child in percentagedistribution (n = 56)

Items	Done		Not done		X^2	P value
	No.	%	No.	%		
1-Consider individual difference	0	0.0	56	100.0	-	-
2-Assess causes and level of anxiety and stress	0	0.0	56	100.0	-	-
3-Allow time for children and families to verbalize feeling about the alteration	0	0.0	56	100.0	-	-
4-Incorporate play activities when providing care to the child	4	7.1	52	92.9	41.143	0.000
5- Provide teaching and honest information to the child and family about all aspects of care	4	7.1	52	92.9	41.143	0.000
6-Facilitate communication between the children with the same age group and health condition	4	7.1	52	92.9	41.143	0.000
7- Work collaboratively with other members of health team and provide referrals as necessary	0	0.0	56	100.0	-	-

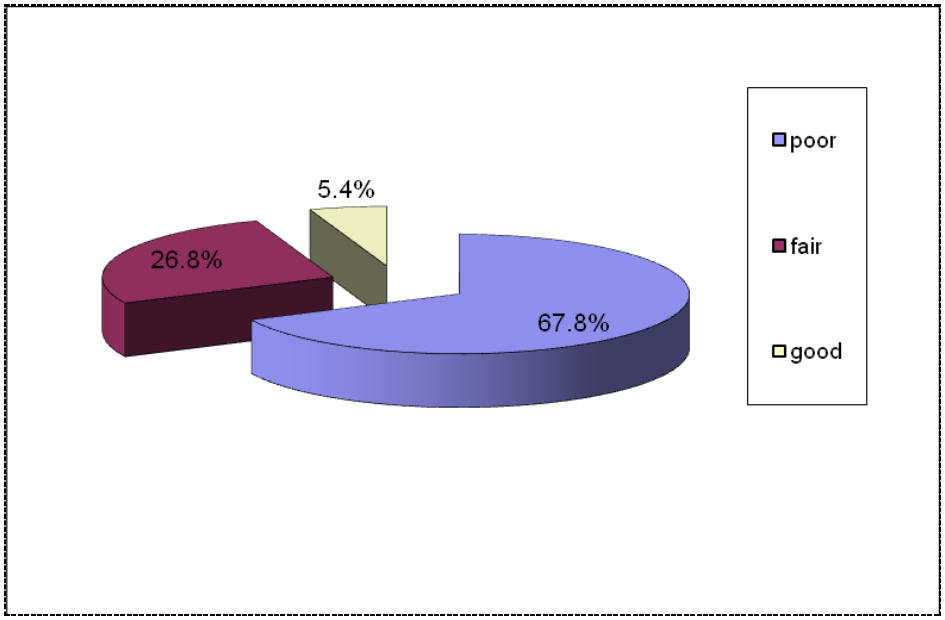
Table (12) proved that, an equal percentage of nurses (92.9 %) don't incorporate play activities when providing care to the child, don't provide teaching and honest information to the child and mothers about all aspects of care and don't facilitate communication between the children with the same age group and health condition. All nurses (100%) don'tconsider individual difference to each child, don't assess causes and level of anxiety and stressand don't allow time for children and families to verbalize feeling about the alteration; moreover they don't work collaboratively, with otherhealth team members. There were highly statistically significant differences among nurses regarding the above mentioned items ($P \leq 0.001$)

Table (13):Percentage distribution of nurses'performance total levels (n = 56)

Items	Done correctly		Done incorrectly		Not done		X^2	P
	No	%	No	%	No	%		
Checklist for pre operative	4	7.1	10	17.9	42	75.0	44.714	0.000
Checklist post operative	4	7.1	14	25.0	38	67.9	32.714	0.000
Checklist for wound care	4	7.1	15	26.8	37	66.1	30.250	0.000
Checklist for IV infusion	17	30.4	2	3.6	37	66.1	33.036	0.000
Checklist for hand washing	11	19.6	8	14.3	37	66.1	27.250	0.000
Checklist for psychological support	0	0.0	4	7.1	52	92.9	41.143	0.000
Total practices	**3**	**5.4**	**15**	**26.8**	**38**	**67.8**	**33.893**	**0.000**
Means±SD22.71± 22.05								

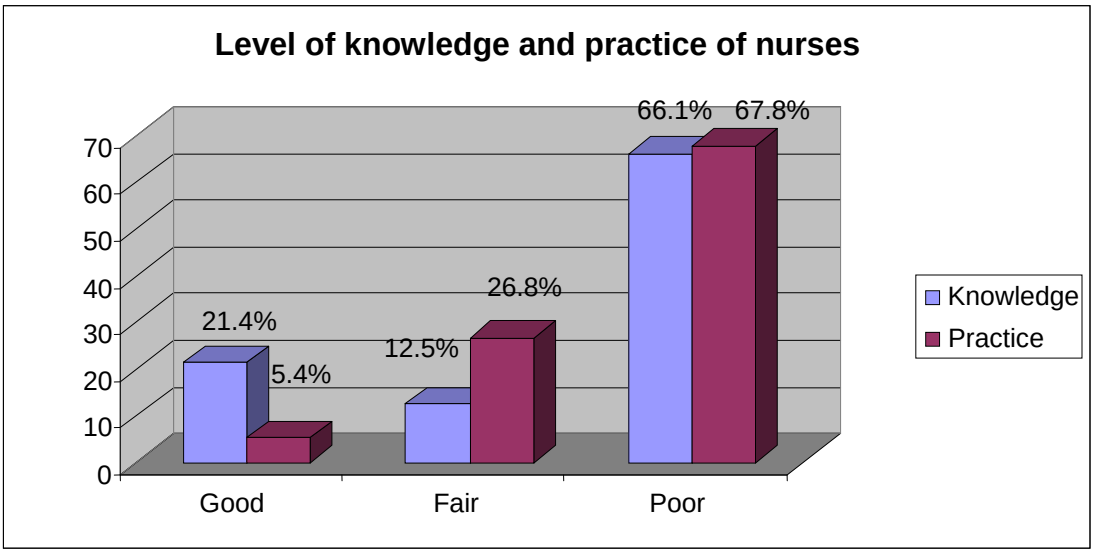
Table (13) revealed that, more than two thirds (67.8%) of nurses had poor performance regarding to pre operative care, post operative care, and wound care, as well as IV infusion care, hand washing and psychological support for children and their mother. The mean of the score of total performance of nurses was22.71± 22.05, there were highly statistically significant differences among nurses regarding the above mentioned items.

Figure (4): Percentage distribution of nurses in relation to their levels performance (n=56)



It is clear from figure (4) that,more than two thirds (67.8 %) of nurses had poor total levels of performance; meanwhile only 5.4% of them had good level of performance.

Figure (5) Percentage distribution of nurses regarding level of knowledge and practice



It is clear from figure (5) that, nearly two thirds (66.1%) of nurses had poor level of knowledge, in the same line more thantwo thirds (67.8 %) of nurses had poor level of performance regarding care for children with intestinal obstruction.

Table (14):correlation ship between total nurses' knowledge and performance scores.

Items	Total Practice	
Total knowledge	r	P value
	0.69	<0.05

r =Pearson's correlation

Table (14) indicated that, there are a positive correlation between total nurses' knowledge and total performance regarding intestinal obstruction.

Part (IV) Comparison of mean scores of nurses' knowledge and performance according to their some sociodemographic characteristics

Table (15): Comparison betweenmean scores of nurses knowledge and performanceaccording to age group (n=56)

Components	Maximum score	20-less 30y. (n=35) Means±SD	≥ 30y. (n=21) Means±SD	t-test value	P value
Information about disease	27	13.05± 5.42	11.1429± 5.38	1.281	0.206
Pre operative care	19	9.77± 5.29	7.381± 3.54	1.83	0.072
Immediate care after surgery	9	2.48± 3.30	1.47± 2.69	1.18	0.242
General observation and caring in day following surgery	19	8.400± 6.00	5.85± 5.45	1.58	0.118
Checklist for pre operative	16	3.914± 4.39	2.47± 3.80	1.24	0.219
Checklist post operative	15	4.62± 3.86	2.52± 3.58	2.02	0.048
Checklist for wound care	19	5.62± 5.56	3.28± 5.71	1.51	0.137
Checklist for IV infusion	17	7.37± 5.89	4.47± 5.01	1.87	0.066
Checklist for hand washing	12	4.82± 3.33	3.28± 2.72	1.78	0.079
Checklist for psychological support	7	.17± .70	.28± .90	0.52	0.600

Table (15) indicated that, the nurses' age from 20 to less than 30 years had the highest mean scores regarding nurses' knowledge and performance. There was no statistically significance difference in all items, except item of checklist of postoperative care as it has statistical significance.

Table (16): Comparison between mean scores of nurses'knowledge and performance according to theirlevel of education (n= 56).

Components	Maximum Score	Bachelor of nursing (n=15) Mean ± SD	Technical institute of nursing (n=4) Mean ± SD	Diploma of nursing (n=37) Mean ± SD	F Value	P value
Information about disease	27	19.86± 4.30	10.00±2.00	9.54± 2.34	65.64	0.000
Pre operative care	19	13.33± 4.68	6.00± .00	7.37± 3.93	12.70	0.000
Immediate care after surgery	9	5.46± 3.15	.250± .500	.94± 2.08	20.83	0.000
General observation and caring in day following surgery	19	14.00± 5.75	5.75± .95	4.97± 3.92	22.87	0.000
Checklist for pre operative	16	8.53± 3.92	5.750± 3.20	1.02± 1.67	47.71	0.000
Checklist post operative	15	8.86± 2.26	8.50± 1.290	1.29± 1.07	157.72	0.000
Checklist for wound care	19	12.33± 3.10	11.50± 3.10	.94± .94	213.41	0.000
Checklist for IV infusion	17	14.13± 1.18	14.00± .00	2.27± .69	1258.35	0.000
Checklist for hand washing	12	8.60± .63	8.75± .50	2.00± .00	2304.24	0.000
Checklist for psychological support	7	0.60± 1.24	.750± 1.50	.00± .00	4.74	0.013

Table (16) showed that, nurses who hold bachelor degree in nursing had the highest mean scores of knowledge and performance. On the same context, there were highly statistically significant differences among nurses' level of education and their mean of the total scores of knowledge and performance. While, there was significant differences among them as regards their performance in relation to providing psychological support to the child.

Table (17): Comparisonbetween mean scores of nurses'knowledge and performance according to theirjob title (n= 56)

Components	Maximum Score	Head nurse (n=18) Mean ± SD	Staff nurse (n=38) Mean ± SD	t- test Value	P value
Information about disease	27	17.78± 5.67	9.54± 2.34	7.708	0.000
Pre operative care	19	11.78± 5.14	7.37± 3.93	3.572	0.001
care after surgeryImmediate	9	4.36± 3.54	.94± 2.08	4.55	0.000
General observation and caring in day following surgery	19	12.26± 6.15	4.97± 3.92	5.39	0.000
Checklist for pre operative	16	7.94± 3.87	1.02± 1.67	9.34	0.000
Checklist post operative	15	8.78± 2.07	1.29± 1.07	17.89	0.000
Checklist for wound care	19	12.15± 3.04	.94± .94	20.72	0.000
Checklist for IV infusion	17	14.10± 1.04	2.27± .69	50.59	0.000
Checklist for hand washing	12	8.63± .59	2.00± .00	68.139	0.000
Checklist for psychological support	7	.63± 1.25	.00± .00	3.085	0.003

Table (17) pointed out that, there were highly statistically significant differences among nurses according to their job title and their mean of the total scores of knowledge and performance.

Table (18): Comparisonbetween mean scores of nurses' knowledge and performance according to theirtraining (n= 56).

Items	Maximum Score	Untrained (n= 18) Means±SD	Trained (n= 38) Means±SD	t-test	P value
Information about disease	27	9.22± 0.94	13.81± 6.05	3.184	0.002
Pre operative care	19	6.05± 0.23	10.21± 5.36	3.266	0.002
Immediate care after surgery	9	0.33± 0.48	2.94± 3.45	3.179	0.002
General observation and caring in day following surgery	19	3.66± 1.32	9.23± 6.35	3.663	0.001
Checklist for pre operative	16	0.83± 1.29	4.57± 4.57	3.397	0.001
Checklist post operative	15	1.77± 2.07	4.81± 4.15	2.926	0.005
Checklist for wound care	19	1.55± 2.30	6.26± 6.18	3.116	0.003
Checklist for IV infusion	17	3.11± 2.84	7.78± 6.12	3.074	0.003
Checklist for hand washing	12	2.38± 1.64	5.13± 3.37	3.261	0.002
Checklist for psychological support	7	0.00± 0.00	0.31± 0.93	1.429	0.159

Table (18) demonstrated that, there were statistically significant difference between the trained nurses and their mean scores of total knowledge and performance in relation to all the above mentioned items. Trained nurses had total score of knowledge higher than untrained nurses. Meanwhile, there is no statistically significance difference related to psychological support for children and their mothers- family.

Part (V) Correlation between the mean scores of nurses' knowledge and performance in relation to theirsocio-demographic data

Table (19): Correlation coefficient between total nurses' knowledge and performance in relation to theirsocio-demographiccharacteristics (n = 56)

Variables	Knowledge		Practices	
	r	P value	r	P value
Age	0.208	0.125	0.181	0.181
Level of education	0.720	0.000	0.877	0.000
Training courses	0.463	0.000	0.376	0.004
Experience in children surgical units	0.020	0.884	0.024	0.861
Experience in children ng. care	0.151	0.266	0.135	0.320
Current position	0.619	0.000	0.895	0.000

r= Pearson's correlations was used

Table (19): Illustrated that, there were positive correlation between nurses' knowledge and performance scores and their obtained training courses as well as current job position. Mean while, there was no statistically significance correlation regarding nurses' ages, years of experience in pediatric surgical practice and experience in children nursing care with their knowledge and performance scores.