Effect of Educational Guidelines on Nurses' Performance related to Care of Arteriovenous Fistula Puncture for Children undergoing Hemodialysis

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Abstract

Background: The Arterio-Venous Fistula (AVF) is the most common vascular access used in hemodialysis because AVF provides good blood flow for dialysis lasts longer than other types of access and is less likely to get infected or cause blood clots than other types of access. Educational guidelines are important for nurses working in pediatric hemodialysis units to improve children outcomes and reduce healthcare costs. **Aim:** This study aimed to evaluate the effect of educational guidelines on nurses' performance related to care of AVF puncture for children undergoing hemodialysis**. Research design:** A quasi-experimental design was utilized in this study. **Setting:** This study was conducted at pediatric hemodialysis unites at Benha and Menufiya University Hospitals**. Subjects:** A convenience sampling of 41 nurses working in the previous mentioned settings and a convenience sampling of 46 children. **Tools of data collection:** Two tools were used, **I:** Structured interviewing questionnaire and **II:** Observational checklists. **Results:** Most of the studied nurses had good level of knowledge and most of them had satisfactory level of practices after educational guidelines implementation. **Conclusion:** The educational guidelines was effective in improving nurses' knowledge and practices level related to care of arteriovenous fistula for children undergoing hemodialysis. **Recommendations:** Provision of continuous education guidelines in order to update nurses' knowledge and practices.

Keywords: Educational guidelines, Nurses' performance, Arteriovenous fistula puncture and hemodialysis.

Introduction

Kidney is one of the most important organs in the body, which is responsible for execration of waste products, regulation of body fluids and electrolytes and produce hormones. Moreover, in a healthy child the kidney works properly but when there are some defects, the kidney may be affected negatively**.** In Egypt, the estimated annual incidence of End Stage Renal Disease (ESRD) in children is around 74/million and the total prevalence of children on dialysis is 264/million **(El-Arbagy et al., 2016).**

Chronic renal failure in children is a global public health problem which tends to take dimensions of epidemic and has severe impact on quality of child's life. It is considered a progressive, irreversible deterioration in renal function in which the body's ability to sustain metabolic, fluid and electrolyte balance fails resulting in uremia (retention of urea and other nitrogenous wastes in the blood). Additionally, it is typically a progressive disease and is asymptomatic in its early stages **(Kefale, 2018)**.

Management for chronic renal failure in children aims to delay the progression of the disease and minimize the complications. Treatment options are dialysis or kidney transplant surgery. Kidney transplantation is the best therapy for children with ESRD. Five years survival rates in children who receive a kidney transplant are greater than survival rates of those who remain on hemodialysis or peritoneal dialysis. However, children with ESRD have special needs that differ from adults, such as the need to achieve normal growth and cognitive development. **(Kliegman et al., 2016)**.

Hemodialysis is used to remove toxins and waste products from the blood stream by connecting the vascular access site to a dialyzer machine that works as a pump that circulates and filters the blood and returns it back into the child. Hemodialysis is achieved through vascular access, either via arteriovenous fistula, graft, or central venous catheter. Arteriovenous fistula is a connection of an artery to a vein which made in the forearm or upper arm. An arteriovenous fistula causes extra pressure and extra blood to flow into the vein making it grow large and strong. The larger vein provides easy, reliable access to blood vessels **(National Kidney and Urologic Diseases Information Clearing house, 2018)**.

The arteriovenous fistula is preferred over the other types of access because it provides good blood flow for dialysis, lasts longer than other types of access and is less likely to get infected or cause blood clots than other types of access. There are multiple factors that may influence the survival of AVF such as age, frailty, sex, race, body mass index, smoking, timing of referral to the surgeons, surgical techniques and skills, vessel size and use of adjuvant therapies such as antiplatelet agents and infrared, timing and technique of cannulation and other diseases such as diabetes, hypotension, thrombosis, infection and aneurysm formation **(Woo & Lok, 2016)**.

Nurses play an important role to prolong the life span of AVF and reduce complications. Needling of arteriovenous fistula prior to hemodialysis is an important part of the hemodialysis process. Successful needling is required to perform the hemodialysis treatment using the arteriovenous fistula. Incorrect techniques can lead to complications including stenosis and aneurysm development, infections, hematoma, pseudoanuerysm, bleeding and pain. Ensuring a good technique will reduce such complications and prolong the life-span of the arteriovenous fistula **(Almasri et al., 2016)**.

Nurses are considered to be the cause of success of the management and prevention of complications in dialysis units. The ability of nurse to minimize the access problems requires adequate education because their experience has been documented to be the most frequently related cause of vascular access complications. The development of standards of care and expertise in staff are important components to successfully prevent vascular access complications. Therefore, there is a need to establish a satisfactory level of performance for nurses working in pediatric hemodialysis units which helps in providing qualified competent nurses who providing care for children **(Khalifa et al., 2017).**

Significance of the study

There has been a significant rise in the prevalence of pediatric chronic kidney diseases worldwide over the past few years. This may be due to early detection of cases during childhood and longer survival of

pediatric due to widespread availability of dialysis and transplantation. Chronic kidney disease is a worldwide public health problem; approximately 18/1million of children suffers from renal failure all over the world every year. The reported prevalence of chronic renal failure in children in Egypt is 225 / million populations **(Ibrahim et al., 2019).**

Incidence rate of chronic renal failure among children at pediatric hemodialysis unit in Benha university hospital is approximately 27 children in the year of 2018. While in Monefiya university hospital is 34 children in the year of 2018 **(Statistical offices in Benha and Monefiya university hospital, 2018).**

Indeed, vascular access is a hemodialysis child's life line, and successful cannulation is critical to its viability. One of the best ways to protect the access is to decrease cannulation attempts and needle manipulation. This will lessen the chance of infiltration and damage to the AVF wall. Nonetheless, multiple needle sticks increase the probability of vessel damage due to the development of aneurisms and infiltrations. Furthermore, provision of AVF remains the single greatest obstacles of successful hemodialysis. Hence it is crucial to use a strategy to prolong the viability of AVF **(Sousa et al., 2015)**.

Aim of the study

The aim of the study was to evaluate the effect of educational guidelines on nurses' performance related to care of AVF puncture.

Research hypothesis

Implementation of educational guidelines was expected to increase nurses' knowledge and practices related to care of arteriovenous fistula puncture for children undergoing hemodialysis.

Subjects and Method

Research design:

A quasi experimental research design was utilized to conduct this study.

Research setting:

The current study was conducted at Pediatric Hemodialysis Units at Benha and Menufiya University Hospitals**.**

Research subjects:

A convenience sample of 41 nurses from the previous mentioned setting were selected regardless their characteristics.

A convenience sampling of all available children undergoing hemodialysis through AVF (46) regardless their characteristics during the period of the study.

Tools of data collection:

Data collection was gathered by using the following two tools:-

Tool (I): Nurses structured interviewing questionnaire:-It was developed by the researcher based on a review of the current relevant researches based on **Khalifa et al., (2017) & El Said, (2017)** to assess nurses' knowledge related to care of AVF puncture. It consists of three parts:

Part (I): Nurses characteristics such as: Age, gender, qualification, job title, place of work, years of experience and attending training courses related to care of AVF puncture**.**

Part (II): Children characteristics such as: Age, gender, education, child ranking, residence consanguinity, medical history and past history.

Part (III): Nurses' knowledge: Assess nurses' knowledge related to care of arteriovenous fistula puncture for children undergoing hemodialysis. It was used twice before and immediately after the

implementation of the educational guidelines. It consists of 29 multiple choice questions.

Nurses' knowledge scored as following: The total level of nurses' knowledge was categorized as the following:

- 75% to 100% was considered good knowledge
- 60% to less than 75% was considered fair knowledge
- Less than 60% was considered poor knowledge

Tool (II): Observational Checklists: It was adopted from **Maria & Jitka, (2014) & Wilkinson &Van Leuven, (2017) to** assess the nurses' practice related to care of arteriovenous fistula puncture. It was used twice before and immediately after the implementation of the educational guidelines. It consists of 67 items categorized under the following:

1- Before cannulation: It includes 12 items regarding preparation of the environment (4 items), preparation of the equipment and materials (1 item), preparation of the child (3items) and assessment of AVF (4 items).

2- During cannulation: It contains 44 items divided into two subgroups. Subgroups 1: infection control practice (31 items) includes hand washing (14 items), hand scrubbing by using alcohol (3items) and sterile gloving (10items) and disinfection of AVF site (4items). Subgroup 2: cannulation technique (13 items).

3- After cannulation: It consists of 11 items regarding needle removal and hemostasis.

Scoring system for Nurses' practice was as the following:

Done correct and complete was scored (1), done incorrect or not done was scored (0). The total level of nurses' practices was categorized as the following: 75% to 100% was considered satisfactory and <75% was considered unsatisfactory.

Ethical considerations:

The researcher clarified the aim of the study to nurses included in the study. A written approval was obtained from each nurse to participate in the study. Nurses were assured that all gathered data was used for research purposes only and the study was harmless. Additionally, nurses were allowed to withdraw from the study at any time without giving the reason. Confidentially of the gathered data and results were secured.

Reliability of tools

Reliability for tools was applied by the researcher for testing the internal consistency of the tools by administrating the tool to the same subjects under similar conditions. Answer from repeated testing was compared (test-re-test Reliability). This turned to be (0.94) for knowledge structured interview schedule questionnaire and (0.96) for nurses' practices observational checklist, this indicate high degree of reliability for the study tools.

Content validity:

Tools of data collection were investigated for their content validity by three experts in Pediatric Nursing from Faculty of Nursing, Benha University who were selected to test the content validity of the instruments and to judge its clarity, comprehensiveness, relevance, simplicity and accuracy. The tools were regarded as valid from the experts' point of view.

Pilot study:

A pilot study was carried out to test the applicability, clarity, efficiency of the tools and to estimate the time needed for each tool. It was done on 10% of the total study

subjects (5 nurses) who excluded in the present study to avoid sample bias and contamination. In the light of pilot study analysis, modification was done and the last form was developed.

Field of work:

The following phases were adopted to achieve the aim of the current study:-

1- Assessment phase:

This phase involved interviewing the nurses to collect baseline data. The researcher was available two days/week. At the beginning of interview; the researcher welcomed each nurse, explained the purpose, duration and activities of the study and took written approval from nurses. The data of children were collected by researcher from the medical record. The researcher gave the studied nurses questionnaire to fill it to assess their knowledge. Each nurse was observed individually during their actual practice of procedures to assess their practices by using observational checklist. This period of pretest took 4 weeks (from the beginning of September 2019 to the beginning of October 2019).

2-Planning phase

Based on baseline data obtained from pre-test assessment and relevant review of literature, the educational guidelines were developed by the researcher as indicated by nurses' level of comprehension in simple Arabic language. Different methods of teaching were used such as modified lecture, brain storming, demonstration, re-demonstration and group discussion. Suitable teaching media were included hand out as well as audio-visual aids, doll and real equipment to help proper understanding of the content by nurses.

3- Implementation phase:

Guidelines were implemented through sessions. The studied nurses were divided into 8 groups each group consisted of 5-6 nurses, the program has taken 4-8 hours for each group, distributed as the following; (4) session for theoretical part each session kept going from 30-45 minutes and (4) session for practical part, each session kept going from 45-60 minutes. Each session included 10 minutes for discussion and feedback. Each session usually started by a summary of what has been taught during the previous session and the objectives of the new topics. These sessions were repeated to each group of nurses.

4- Evaluation phase:

After the implementation of the educational guidelines content, the post-test were administered to assess nurses' knowledge and practices using the same formats of pretest. This help to evaluate the effect of implemented educational guidelines. This was done immediately after the implementation of educational guidelines.

Statistical analysis:

The collected data organized, tabulated and statistically analyzed using Statistical Package for Social Science (SPSS) version. Descriptive statistics were applied (e.g. frequency, percentages, means and standard deviation). Test of significance, Chi-square test (X^2), Fisher exact test, F test, Independent T test and correlation coefficient (r). These tests were applied to test the study hypothesis. Reliability of the study tools was done using Cronbach's Alpha. A significant level value was considered when $p < 0.05$ and a highly significant level value was considered when $p < 0.001$. No statistical significance difference was considered when $p > 0.5$.

Results:

Table (1): Showed that 48.8% of nurses were in the age group of 25-<30 years ($\bar{x}$±SD 25.84±4.02 years). Concerning job title, 85.4% of them were working as staff nurse and 75.6% of them working in Benha university hospital. Regarding, years of experience 48.8% of them had 4<6 years of experience ($\bar{x}$±SD 5.74±2.62 years).

Figure (1): Demonstrated that 82.6 % of nurses were females.

Figure (2): Revealed that 50% of the studied nurses qualification was diploma of Nursing technical institute.

Figure (3): Showed that 39.1% of nurses had poor level of knowledge before educational guidelines implementation. In contrast, 80.4% had good level of knowledge after educational guidelines implementation.

Figure (4): Showed that 52.2% of the nurses had unsatisfactory practices before educational guidelines implementation .On the other hand, 91.3% had satisfactory practices after educational guidelines implementation.

Table (2): Illustrated that there was highly statistical significance relation between total knowledge of studied nurses and their educational level and years of experience before and after educational guidelines implementation (p-value < 0.000).

Table (3): Revealed that there was highly statistical significance relation between total practices of studied nurses and their educational level and years of experience before and after educational guidelines implementation (p-value < 0.000).

Table (4): Illustrated that there was a highly statistical significance positive relation between total knowledge scores and total practices scores of the studied nurses before and after educational guidelines implementation r = 0.84, r = 0.42, p-value < 0.000) respectively.

(Table 1): Percentage distribution of the studied nurses regarding their characteristics (n=41).

Nurses' characteristics	No	%
Age in years		
20-<25	14	34.1
25-<30	**20**	**48.8**
30-<35	5	12.2
≥35	2	4.9
$\bar{x}$±SD 25.84±4.02		
Gender		
Male	7	17.4
Female	**34**	**82.6**
Qualification		
Nursing technical school	7	17.4
Nursing technical institute	**21**	**50.0**
Bachelor of nursing	13	32.6
Job title		
Head nurse	6	14.6
Staff nurse	**35**	85.4
Place of work		
Banha University Hospital	30	73.2
Menufia University Hospital	11	26.8
Years of experience		
<2	7	17.0
2-<4	9	22.1
4-<6	20	48.8
≥ 6	5	12.1
$\bar{x}$±SD 5.74±2.62		

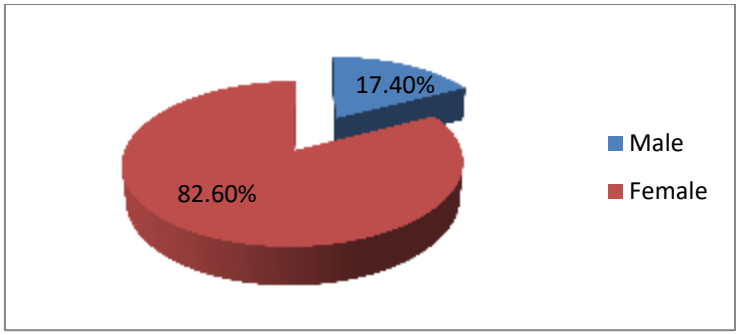

Figure (1): Distribution of the studied nurses regarding their gender (n=41).

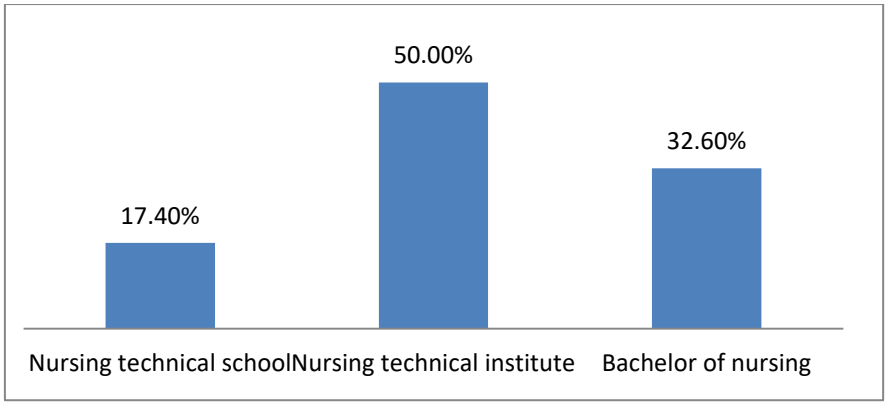

Figure (2): Distribution of the studied nurses regarding their qualification (n=41).

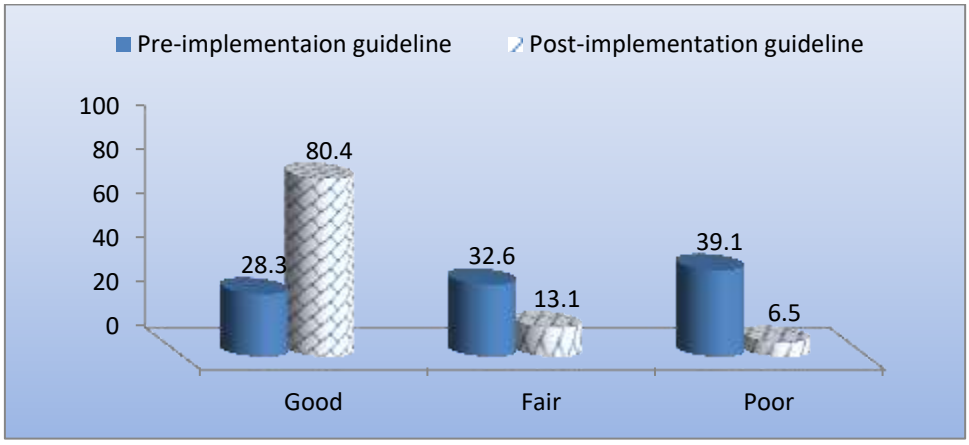

Figure (3): Distribution of the studied nurses regarding their total level of knowledge pre and post implementation of educational guidelines (n=41).

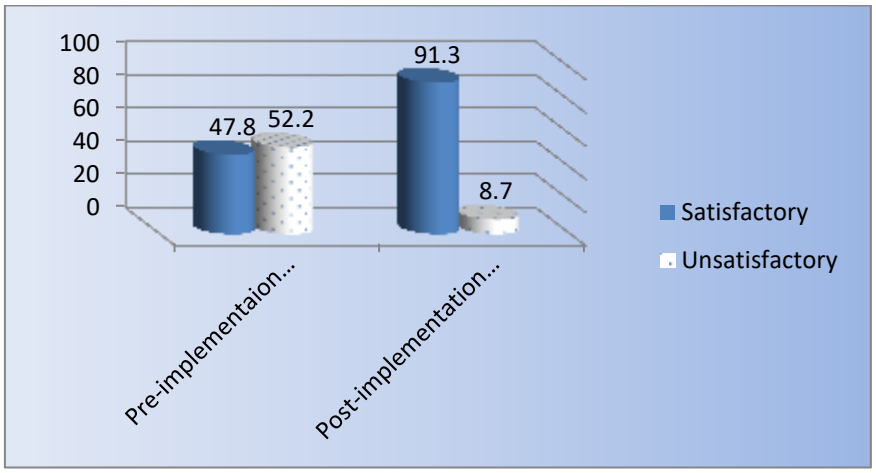

Figure (4): Distribution of the studied nurses regarding their total practices level pre and post implementation of educational guidelines.

Table (2): Relation between nurses' knowledge and their characteristics

Nurses' characteristics	Before educational guidelines implementation (n=41)		After educational guidelines implementation (n=41)		F test Independent T test	p-value
	Mean±SD	%	Mean±SD	%		
Age						
20-<25years	27.8235±7.32492	36.1	50.1176±6.10207	37.0	14.964	0.276
25-<30years	29.2273±8.44552	49.1	50.3636±5.13202	48.1	16.634	0.354
30-<35years	25.6000±7.16240	9.8	50.2000±5.76194	10.9	11.808	0.136
≥35years	33.0000±8.48528	5.0	46.5000±10.60660	4.0	1.976	0.295
Gender						
Male	25.1250±7.88194	15.3	50.0000±7.78276	17.4	1.351	0.184
Female	29.1842±7.69646	84.7	50.1053±5.19246	82.6	0.048	0.962
Qualification						
Nursing technical school	29.0000±10.05698	17.7	49.7500±6.36396	17.3	24.318	0.000
Nursing technical institute	28.4348±7.59082	49.9	49.7391±5.97888	49.7	111.807	0.000
Bachelor of nursing	28.2667±7.35300	32.4	50.8000±4.93095	33.1	97.170	0.000
Years of experience						
<2years	27.8889±8.95048	17.0	49.5556±7.55167	17.0	30.808	0.000
2-<4years	28.7273±6.97739	22.1	50.6818±4.47625	22.1	154.306	0.000
4-<6years	20.3400±5.23541	48.8.	35.6781±3. 26841	48.8	26.507	0.000
≥6years	28.4667±8.73308	12.1	49.5333±6.15127	12.1	58.342	0.000

** Highly Statistical significance (p-value < 0.000)

Table (3): Relation between nurses' practices and their characteristics

	Before educational guidelines implementation (n=41)		After educational guidelines implementation (n=41)		F test Independent T test	p-value
	Mean±SD	%	Mean±SD	%		
Age						
20<25years	16.2353±5.55123	33.6	43.8235±.63593	37.1	414.434	0.674
25<30years	18.4545±5.24384	49.4	43.6364±.84771	47.7	494.418	0.513
30<35years	19.0000±6.85565	11.4	44.0000±.00000	10.9	66.489	0.372
≥35years	22.5000±2.12132	5.5	43.5000±.70711	4.3	176.400	0.126
Gender						
Male	15.3750±5.31675	15.0	43.6250±.74402	17.3	1.425	.161
Female	18.3947±5.47001	85.0	43.7632±.71411	82.7	0.494	.624
Education						
Nursing technical school	17.0000±5.50325	16.5	43.7500±.46291	17.4	187.689	.000
Nursing technical institute	16.7826±5.41846	47.0	43.7826±.59974	50.0	564.178	.000
Bachelor of nursing	20.0000±5.38516	36.5	43.6667±.97590	32.6	280.501	.000
Years of experience						
<2years	15.0000±5.87367	17.0	43.8889±.78174	17.0	213.924	0.000
2-<4years	18.7727±5.09838	22.1	43.6364±.84771	22.1	509.147	0.000
4-<6years	20.3400±6.23541	48.8	45.6781.	48.8	426.507	0.000
≥6years	18.2667±5.66274	12.1	±26841	12.1	303.345	0.000
			43.8000±.41404			

** Highly Statistical significance (p-value < 0.000)

Table (4): Correlation between total knowledge and total practices before and after educational guideline implementation (n=41)

	Total Knowledge scores			
	Before educational guidelines implementation (n=41)		After educational guidelines implementation (n=41)	
	r	p-value	r	p-value
Total Practices scores	0.84	0.000**	0.42	0.003**

**** Correlation is significant at the 0.01 level (2- tailed).**

Discussion

Educational guidelines are important for nurses working in pediatric hemodialysis units to improve children outcomes and reduce healthcare costs. It is essential that everyone involved in caring for children with a vascular access device is educated about care of arteriovenous fistula. Nurses need to be confident and proficient in care of arteriovenous fistula. Well-organized educational guidelines that enable nurses to provide, monitor, and evaluate care and to continually increase their knowledge and improve their practices **(National Institute for Health and Care Excellence, 2018).**

Regarding to characteristics of the studied nurses as showed in table (1), it was cleared $\bar{x}$±SD was 25.84±4.02 years. This finding disagreed with **Yousif et al., (2017)** in a study entitled "The effect of an educational program for vascular access care on nurses' knowledge in Khartum state" who showed that $\bar{x}$±SD was 34.31±6.59 years. This could be due to the demanding nature of dialysis service so that older nurses may find it difficult to cope with the load of work required.

Related to gender of the studied nurses according to figure (1), the majority of the nurses were females. This result was in the same line with **Ibrahim et al., (2019)** in a study entitled "Assessment of nurses' performance regarding care of children undergoing hemodialysis therapy" who reported that more than three quarters (78%) of the studied nurses were females. While this finding is in disagreement with **Bakey, (2014)** in a study entitled "Evaluation of nurses practices throughout hemodialysis treatment for patients in hemodialysis unit at Baghdad teaching hospitals " in Iraq who stated that less than half (46.7%) of studied nurses were females. This reflects the general nursing situation in Egypt where most of the nursing is carried out by females and may also related to the studying of nursing in Egyptian universities were exclusive for females only till few years ago.

Concerning nurses' education according to figure (2), half of the studied nurses had nursing technical institute degree. This finding came on the same line with **Al-Mawsheki, (2016)** in a study entitled "Nurses' knowledge and practice regarding care for the patients during hemodialysis" who reported that more than one half (58%) of studied nurses had technical institute degree. The findings of this study might be due to the fact that the nursing technical institute provided the community with a large number of the nursing graduates than the other agencies such as the faculties of nursing.

Regarding years of experience according to table (1), $\bar{X}$±SD was 5.74±2.62. This finding agrees with **Yousef et al., (2019)**

in a study entitled "The effect of educational program on knowledge and practices of nurses regarding infection control measures for children under hemodialysis" who found that the $\bar{x}$±SD was 6.53±2.98. This could be due to that nurses in pediatric hemodialysis unit require more years of experience to have good knowledge and practice regarding care of arteriovenous fistula.

According to figure (3) the findings of the current study highlighted that, less than two fifth of the studied nurses had poor level of knowledge before educational guidelines implementation. The finding of this study is congruent with **Saleh et al., (2018)** in a study entitled "Nurses compliance to standards of nursing care for hemodialysis patients" who mentioned that more than two fifth (41.5%) of studied nurses had unsatisfactory knowledge level at the preprogram phase. This could be due to the fact that all nurses did not attend any training courses related to care of arteriovenous fistula (AVF) for children undergoing hemodialysis, the lack of nurses' incentives and desire to enhance or at least refresh their knowledge whether new or old graduated nurses as well as the work overload.

The current study found that, the majority of nurses had good level of knowledge after educational guidelines implementation with a highly statistical significant difference between pretest and posttest (P <0.000). This finding was paralleled with **Yousef et al., (2017)** who revealed that three quarters (75%) of nurses had good level of knowledge in the post implementation phase and there were highly statistical significant differences between pretest and posttest (P <0.001). This improvement indicated that the educational guidelines were a successful method to increase nurses' knowledge.

According to figure (4), the findings of the current study highlighted that, more than half of the studied nurses had unsatisfactory practices level before educational guidelines implementation. This result was inconsistent with **Ibrahim et al., (2019)** who cleared that, more than half (56%) of the studied nurses had incompetent practice regarding care of child undergoing hemodialysis therapy. But this finding was in disagreement with **Al-Mawsheki et al., (2016)** who showed that more than half of studied nurses (56%) had satisfactory level of practice regarding care in hemodialysis therapy. This might be due to the lack of nurses' application of knowledge especially regarding nursing interventions with common complications that occur and misunderstanding of their roles as there is no job description or definition of responsibilities in the hemodialysis unit.

The current study showed that the majority of nurses had satisfactory practices in the post implementation phase with highly statistical differences between pretest and posttest (p< 0.000). This finding agree with **Saleh et al., (2018**) who found that the majority (80.9%) of them had satisfactory practices in the post implementation phase with a highly statistical significant differences between pre -test and post- test (p<0.001).

Regarding relationship between the total level of nurses' knowledge and their characteristics according to table (2), the present study showed that there was highly statistical significant relation between total knowledge of nurses and their qualification and years of experience before and after educational guidelines implementation. This result disagree with **Ahmed & Mohamed, (2019)** in a study entitled " Effect of educational program about infection control precautions for nurses in pediatric

hemodialysis units" whose results showed that there was no statistical significant relation between nurses' total level of knowledge and their education and years of experience in the pre and post implementation phase. This could be due to nurses with more years of experience proved to have better knowledge than those with shorter experience.

Concerning relationship between the nurses' total level of practice and their characteristics according to table (3), the present study showed that there was highly statistically significant relation between total practices of nurses and their qualification and years of experience before and after educational guidelines implementation. This result agree with **Bayoumi & Mahmoud, (2017)** in a study entitled " Effect of education program on nurses' knowledge and practice regarding care of central venous line in pediatric hemodialysis: evidence-based practice guidelines" who showed that there was a highly statistically significant relation between nurses' practice and their educational level and years of experience at pre implementation phase and immediately after implementation. This could be due to nurses with longer years of experience had better practice about care of AVF puncture for children undergoing hemodialysis than the less experienced nurses. Also day to day activities enhances nurses' experiences and improve their practices. Additionally, education is a potential means for implementing prevention strategies as it alters perception, increases knowledge and in turn changes work practice.

As regarding to studying the correlation between studied nurses' total knowledge and total practices regarding care of AVF puncture for children undergoing hemodialysis therapy according to table (4), the current study revealed that there was highly Statistical significance positive correlation between total knowledge and total practices of the studied nurses before and after educational guidelines implementation. This result was convenient with **Saleh et al., (2018)** who found that there was a strong positive correlation ($p<0.001$) between nurses' total knowledge and their total practice. Meanwhile, this result disagreed with **Ibrahim et al., (2019)** who illustrated that there was no statistically significant relation ($p > 0.05$) between nurses' knowledge and practice in their study. This might be due to knowledge is the baseline for the practices.

Conclusion

The educational guidelines was effective in improving nurses' knowledge and practices level related to care of arteriovenous fistula puncture for children undergoing hemodialysis. Besides, there was a highly statistical significant positive correlation between nurses' total knowledge and practices level related to care of arteriovenous fistula puncture for children undergoing hemodialysis before and after the educational guidelines implementation.

Recommendations

Provision of continuous education guidelines in order to update nurses' knowledge and enhance their practices related to care of arteriovenous fistula puncture for children undergoing hemodialysis.

Further researches:

An educational program for the parents and children related to care of hemodialysis vascular access must be conducted.

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تأثير الإرشادات التعليمية علي أداء الممرضات تجاه رعاية وخز الوصلة الشريانية الوريدية للأطفال الخاضعين للغسيل الدموي

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تعتبر الوصلة الشريانية الوريدية هي الطريقة الأكثر إستخداما في الغسيل الدموي، وعدد الأوعية الدموية المتاحة لعمل الوصلة الشريانية الوريدية قليلة لذلك يجب أن تكون الممرضات على دراية كاملة بالرعاية التمريضية للوصلة الشريانية الوريدية لحمايتها وإطالة وقت إستخدامها. لذلك هدفت الدراسة إلي تقييم تأثير الإرشادات التعليمية على أداء الممرضات تجاه رعاية وخز الوصلة الشريانية الوريدية للاطفال الخاضعين للغسيل الدموى.وقد أجريت هذه الدراسة في وحدات الغسيل الكلوي للأطفال في كل من مستشفى بنها الجامعي ومستشفي المنوفية الجامعي علي جميع الممرضات العاملات في هذه الوحدات وعددهم ٣٤ في مستشفي بنها و ١٢ في مستشفي المنوفية الجامعي. حيث كشفت النتائج عن أن هناك فروق ذات دلالات إحصائية بين مستوي معلومات وممارسات الممرضات ومؤهلاتهم وسنوات الخبرة قبل وبعد تنفيذ الإرشادات التعليمية. كانت هناك علاقة إيجابية ذات دلالة إحصائية بين مستوي معلومات وممارسات الممرضات تجاه رعاية الوصلة الشريانية الوريدية للأطفال الخاضعين للغسيل الكلوي قبل وبعد تنفيذ الإرشادات التعليمية.وأوصت الدراسة بأن هناك حاجة إلي تنفيذ برامج توجيهية للممرضات العاملات في وحدات الغسيل الكلوي للأطفال لتحديث مستوي معلوماتهم وتحسين ممارساتهم تجاه رعاية الوصلة الشريانية الوريدية للأطفال الخاضعين للغسيل الكلوي. كما أوصت بعمل برامج تعليمية للوالدين والأطفال تجاه رعاية الأوعية الدموية المستخدمة في الغسيل الدموي.