

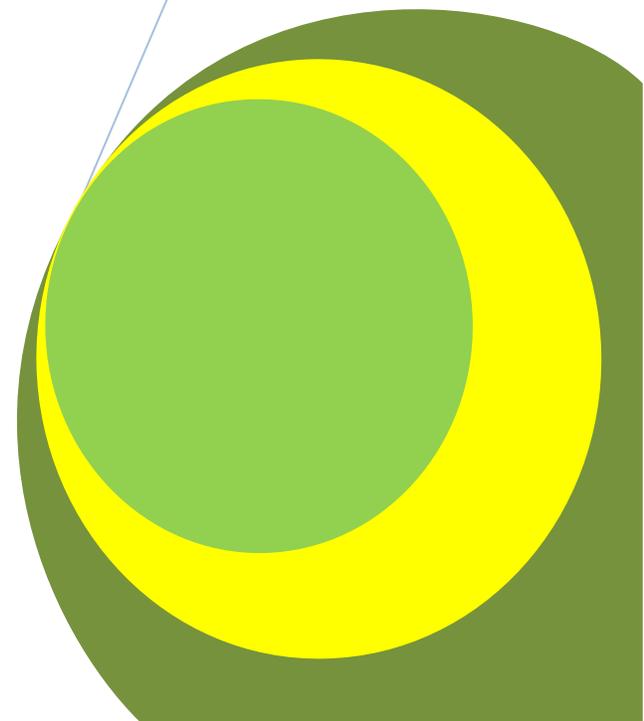
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Proposed Developed Standards: Staff Nurses Compliance at Dialysis Unit

By

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Research Article

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ABSTRACT

Background: Standards of practice provide a guide to the knowledge, skills, judgment and attitudes that are needed to practice safely moreover standard is a means of governing the practice of nurses at all levels of practice. This study aimed to: determine the compliance of nurses at dialysis unit with proposed developed performance standards. **Design:** Observational cross-sectional study was utilized to conduct this study. **Subject:** This study included all staff nurses working in dialysis unit. **Setting:** It was conducted at Dialysis Unit at Benha University Hospital. **Tools:** Two different tools were utilized, structured interviewing questionnaire and observational check list for nurses' performance according to the developed standards. **Results:** Showed that most of studied staff nurses agreed about all proposed (structure and process) standards (policy and objective standards, organizational chart, job description, human resources, documentation, safe handling of medications, infection control, nursing station, training, environmental factors, patient care and patient right standards), they have moderate level of performance according to the proposed standards. There was negative insignificant correlation between nurses' performance and their age, experience and experience in work place. **Conclusion:** The present study combines to conclude that the proposed developed standards are acceptable to be used in dialysis unit at Benha University Hospital. **Recommendations:** The developed standards should be applied and communicated to all staff nurses of the Dialysis Unit at Benha University Hospital through workshops, booklets and pursuers.

Keywords: Nursing standards, Dialysis Unit and nurse performance.

INTRODUCTION

The central administration for national information center for health and population in Egypt, 2004 reported that chronic renal failure of hospitalized patient is approximately 1.36% of all hospitalized Egyptian patients. The incidence of chronic renal failure in population in developed countries is 6 – 8 per 100.000 /per year (Zahran and Frances, 2010). A dialysis nurse is a registered nurse who specializes in caring for patients undergoing hemodialysis or peritoneal dialysis, both of which are life-saving procedures for those with severely impaired kidney function. Dialysis nurses fall into the general category of nephrology nursing, the branch of nursing specializing in care for patients with kidney disorders and diseases, and assist patients with both forms of dialysis, although peritoneal dialysis requires nurses who make in-home visits (Burrows-Hudson, and Prowant, 2005). Patient undergoing hemodialysis procedure requires special nursing care. This has created the need for high skilled personnel trained in the art of hemodialysis procedure. Nurses working in dialysis unit should comply with the occupational safety and health administration standards (Baer, 2007).

Nursing responsibility is to assess the patients' condition, teach patients how to do peritoneal dialysis or hemodialysis in the unit setting, consider the patients' learning needs and provide education about their treatment, make a training plan for each patient, give the patients the medications ordered by doctors, evaluate the patients' ability to perform their dialysis treatments and take all doctor-prescribed medications, help patients follow-up with their transplant centre, review the patients' lab work, home medications and activities and let the doctors know about changes in patients' conditions (Bernzweig, 2008).

(Gardner, et.al. 2007) concluded through their study that there was a significant relationships between work environment perceptions and the number of patient hospitalizations. These findings clearly indicate an urgent need for research that examines the predictive ability of the work environment for patient and nurse outcomes. Opportunities exist for dialysis facilities to create and maintain favorable environments for nurses. The

findings from this study also underscore the need for organizational and unit level strategies targeted at facilitating and supporting nurse autonomy and control over nursing practice in dialysis facilities.

Nursing standards of care that are demonstrated by the nurse through the nursing process involve assessment, diagnosis, outcome identification, planning, implementation and evaluation. The nursing process is the foundation of clinical decision making and compasses all significant action taken by nurses in providing care to all patients (Potter, 2005). Standards are outlines that the profession expects of its members, promotes guides and directs professional nursing practice—important for self-assessment and evaluation of practice by employers, clients and other stakeholders, provides nurses with a framework for developing competencies aids in developing a better understanding & respect for the various and complimentary roles that nurses have (Odom, and Strain, 2005).

Professional standards ensure that the highest level of quality nursing care is promoted. Excellent nursing practice is reflection of sound ethical standard, client care requires more than just the application of scientific knowledge. A nurse must be able to think critically, solve problem and find best solution for clients' need to assist clients in maintaining or improving their health (Gaughey, 2009).

In Egypt also of note, compliance with developed practice guidelines were not uniform across the haemodialysis facilities and this was especially prominent comparing Giza and Cairo governorates for some sub-items. This denotes an unsystematic approach in the Egyptian haemodialysis units and variability in adoption of evidence-based guidelines between facilities affiliated to the MOHP (A.M.A. Ahmed, et al. 2013).

The nursing practice standards is applied at all times to all nurses regardless of role, provide guidelines to assist nurses in decision making, Support nurses by outlining practice expectation of profession, inform the public and others about what they can expect from practicing nurses and are used as a legal reference for reasonable and prudent practice (Basavanthappa, 2009).

Significance of the study:

All standards of practice provide a guide to knowledge, skills, judgment and attitude that are needed to practice safely. The nursing standards are important because they outline what the profession expects of its member, promote, guide and direct professional nursing practice. The standards aid in developing better understanding and response for various and complementary roles that nurses have (Danasu, 2007). So the present study was conducted to determine the impact of developed nursing standards on nurses' performance at Dialysis Unit.

Aim of the study:

This study aimed to determine the compliance of nurses at dialysis unit with proposed developed performance standards.

The following research questions were developed to conduct this study.

- 1- What are the nursing standards that can be applied in hemodialysis unit?
- 2- What is the level of nurses' compliance with the proposed developed nursing standards?

MATERIAL AND METHODS

Design

This study demonstrated an intervention design.

Setting

The study was conducted at Dialysis Unit at Benha University Hospital.

Subjects

The study subject includes all staff nurses working in Dialysis Unit at Benha University Hospital, the total sample was (44) nurses.

Tools

Two tools were used to collect the data:

Tool I – standards questionnaire sheet:

It was developed by the researcher through the review of literature to assess the importance of proposed standards. It consisted of two parts:

First part: Personal characteristics, it included age, years of experience, experience in work place.

Second part: included the proposed standards which include two types of standards (structure and process standards)

Structure standards: related to presence of (policy and objective, organizational chart, job description, human resources, nursing station, training, and environmental factor).

Process standards: that describe the activities and behaviors designed to achieve patient centered goals as (documentation, safe handling of medications, infection control, patient care and patient rights).

Each statement response was ranged from 4 to zero: 4 (very important), 3 (important), 2 (not ensure), 1 (not important), 0 (never not important). Modification was done to be 3 (very important), 2 (important), 1 (not important).

Tool II- Observational check list:

It was developed by the researcher. Its purpose was to examine the developed standards criteria through observing its compliance by staff nurses working in Dialysis Unit. Each statement response was measured on a 2-points (0) Not available, (1) available for *Structure standards* and (0) Not done, (1) done for *Process standards*.

Scoring system for Process standards: The score of the items were summed and the total divided by the number of items to give a mean score. Performance level was considered: lower level of compliance ≤ 30.6 , moderate level of compliance 30.7-61.3 and high level of compliance 61.4-92.

Methods

1. An official letter clarifying the purpose of the study was obtained from the Faculty of Nursing to conduct the study and collect the necessary data.
2. All tools were developed by the researcher after reviewing the national and international related literature using journals, magazines, periodicals, textbooks, internet and theoretical knowledge of the various aspects concerning the topic of the study. Also, tools face and content validity was tested by 5 Experts, in the field nursing administration. Reliability analysis - scale (alpha) was =.89
3. At the interview with nurses, each subject were informed about the purpose and benefits of the study; and subjects were informed that their participation is voluntary in that they have the right to withdraw from the study at any time without giving any reason. Subjects were assured about complete confidentiality of the obtained data and that the study would not affect in any way the work and consent was obtained from the participants.
4. A Pilot study was carried out on 10% of the total subjects (4 nurses) to test clarity, relevance and applicability of tools; it also served in estimating the time needed for filling the two tools. No modification was done. Those nurses were included in the study.
5. The average time needed to complete appendix I ranged between 20-30 minutes and appendix II ranged between 40-55 minutes. Data were collected by using a self administration questionnaire prepared by the researcher. Technique of data collection was face to face interviews. Collection of data covered period of one month (September 2011) for appendix I.

6. The observation was performed from beginning to the end of the dialysis process; the average number of observed nurses was 2 nurses per day, the observation process took about 3 months from the beginning of January 2012 to the end of March 2012.

Statistical analysis

Data entry and analysis were done using computer software statistical package for social sciences (SPSS) version 11. Data were presented using: Descriptive statistics in the form of frequencies, percentage, mean and the standard deviation. Person correlation coefficient (*r*) was used to investigate correlation between nurses' compliance and their age, experience and experience in work place. For all statistical tests done, the threshold of significance was fixed at the 5% level, *P*-value ≤ 0.05 Significant.

RESULTS

Table (1) clearly shows personal characteristics of staff nurses, the results revealed that 63.6% of studied staff nurses ages were between 26 - 34 years old, 70.5% of studied staff nurses were graduated from diploma nursing school, 31.8 % of studied nurse have years of experience from 6 – 10 years, 31. 8% have 6 – 10 years of experience in work place; finally 75.0% had no training in quality.

Table 1, Socio-Demographic Characteristics of Studied Staff Nurses (n=44)

Items	No	%
Age		
≤ 25	9	20.5
26-34	28	63.6
≥ 35	7	15.9
Mean ±DS	28.9545 ± 5.4982	
Qualification		
Diploma degree in nursing	31	70.5
Diploma with specially	2	4.5
Technical nurse institute	11	25.0
Years of experience		
≤ 5	13	29.5
6-10	14	31.8
11-15	9	20.5
≥ 16	8	18.2
Mean ±DS	10.8409 ± 5.8227	
Experience in work place		
≤ 5	13	29.5
6-10	14	31.8
11-15	9	20.5
≥ 16	8	18.2
Mean ±DS	9.4773 ± 5.7283	
Have a training in quality		
No	33	75.0
Yes	11	25.0

Table (2), declares that most of the studied staff nurses reported the importance of all items of structure standards.

Table 2, Nurses’ Opinions about the Importance of Proposed Structure Standards (n=44)

Structure standards	Very important		important		Not important	
	No	%	No	%	No	%
1. policy standard	43	97.7	1	2.3	0	0
2. Organizational chart standard	36	81.8	5	11.4	3	6.8
3. Job description standard	40	90.9	4	9.1	0	0
4. Human resources standard	39	88.7	2	4.5	3	6.8
5. Nursing station standard	41	93.2	2	4.5	1	2.3
6. Environmental factors standard	37	84.1	4	9.1	3	6.8
7. Training standard	40	90.9	2	4.5	2	4.5

Table (3) clarifies that most of the studied staff nurses reported that all items of process (performance) standards were very important.

Table 3, Nurses’ opinions about the importance of Proposed Process standards (n=44)

Process standards	Very important		important		Not important	
	No	%	No	%	No	%
1. Documentation standard	41	93.2	2	4.5	1	2.3
2. Safe handling of medication standard	38	86.4	4	9.1	2	4.5
3. Infection control standard	37	84.1	5	11.4	2	4.5
4. Patient care standard	43	97.7	1	2.3	0	0
5. Patient rights standard	39	88.7	3	6.8	2	4.5

Table (4) clearly shows that 100% of studied staff nurses had found policy standard, organizational chart standard and job description standard were not available. While 27.3% of studied staff nurses had found nursing station standard was available.

Table 4, The Availability of Proposed Structure Standards as Observed by the Researcher.

Structure standards	Available		Not available	
	No	%	No	%
1. policy standard	0	0	44	100.0
2. Organizational chart standard	0	0	44	100.0
3. Job description standard	0	0	44	100.0
4. Human resources standard	9	20.5	35	79.5
5. Nursing station standard	12	27.3	32	72.7
6. Environmental factors standard	6	13.6	38	86.4
7. Training standard	8	18.2	36	81.8

Table (5) presents that 79.5% and 75.0% of studied staff nurses did not perform the documentation standard and patient rights standard respectively. While less than half of studied nurses perform safe handling of medication standard, infection control standard and patient care standard.

Table 5, Distribution of Staff Nurses' Compliance with Proposed Process Standards. (No. =44)

Process standards	Done		Not done	
	No	%	No	%
1. Documentation standard	9	20.5	35	79.5
2. Safe handling of medication standard	19	43.2	25	56.8
3. Infection control standard	20	45.5	24	54.5
4. Patient care standard	19	43.2	25	56.8
5. Patient rights standard	11	25.0	33	75.0

Figure (1) clearly shows that 68.18% of studied staff nurses have moderate compliance in total of proposed process standards, while 31.82 % of studied staff nurses have low compliance in total of proposed process standards.

Fig. 1: level of Nurses' compliance with a Proposed Process Standards in Dialysis Unit (n=44)

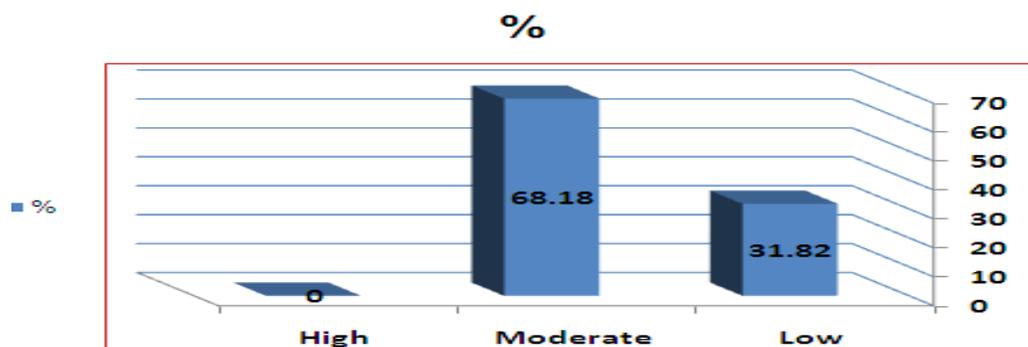


Table (6) clarifies that there was negative insignificant correlation between nurses' compliance and their age, experience and experience in work place.

Table 6, Association between Nurses' Performance Score and their Demographic Characteristics

Demographic Characteristics	Nurses compliance	
	r	P-value
Age	-0.105	0.498
Experience	-0.087	0.572
Experience in workplace	-0.204	0.185

DISCUSSION

The finding of the present study clarified that three quarters of studied nurses did not attain any training about quality and standards. This finding is in agreement with Hassan, (2005) who mentioned that the majority nurses did not attain any training program, this analysis is consistent with Wright (2004) who emphasize that the lack of nurses' education is considered as system failures that lead to health care error.

The result of the present study indicated that the majority of studied nurses have agreed about the importance of the policies and objectives which should be written and available to all nurses working in dialysis unit. This result was in agreement with Koren (2011) who reported that the presence of a unified policy and objective of unity helped to improve nurses' performance.

The findings of the present study revealed that the majority of studied nurses have agreed about the importance of organizational chart which should be clear and available to all nurses and must display the lines of authority. This finding is in agreement with Brown and Harvey (2006) who emphasized that structure is the linkage between the outer environment and the organization as system and it helped all team of an organization work together so that they can work toward common goals.

As regarding to job description, the result of the present study clarified that most of the studied nurses have agreed about the importance of presence of job description in dialysis unit that describe and clarify the role of every nurse in the unit, it must be clear and reviewed every 6 months. This finding is in agreement with Shaw (2008) who mentioned that the importance of job description especially in roles, it refers to asset of expected behavior pattern attributed to someone occupying a given position in the unit, finally mentioned the job description must be written and updated periodically.

The findings of the present study showed that majority of studied nurses have agreed about the importance of human resources as available head nurse with experience not less than 3 years, head nurse have clearly defined and declared tasks and responsibilities. This finding is in agreement with Douglass (2008) which emphasized that, head nurse have clearly defined and declared tasks and responsibilities.

The findings of the present study revealed that the majority of studied nurses have agreed about the importance of nursing station, this finding supported by Howatson and Jones (2006) who mentioned that importance of nursing station for each unit to allow observation of all patients, a nurses' station which has direct visual observation of all patients. No walls shall block the view from the nurses' station to the patient area in a given treatment area and medication preparation area. The medication preparation area shall be equipped with locked storage and non-portable steel storage for controlled substances.

The result of present study revealed that the majority of studied nurses have agreed about the importance of environmental factor. This result is in agreement with Youniss [28] who mentioned that presence of equipment maintenance room and equipped with a hand wash, an equipment storage room for the storage of clean equipment available for patient use and dialyzers reuse room.

Regarding to training, the finding of the present study clarified that most of the studied nurses have agreed about the importance of training. This finding is in agreement with Formulary [12] who emphasized that nursing performance standard include guidelines for quality of care, education, collegiality, ethics, collaboration and resources utilization. Also Lancaster [22] mentioned that the majority of studied nurses have agreed about the importance of training programs which shall be provided by the unit of employment prior to the employee.

Concerning importance of process as documentation, the result of the present study clarified that most of the nurses have agreed about the importance of documentation. This finding supported by Smith (2009) who reported that nurse must document all nursing actions, observations and client responses in a permanent record. This record of nursing actions should be a mirror image of the written plan. Moreover, Johnson and Closkey, (2008) stated that the documentation emphasizes nurses' commitment to making their practice visible and understandable by revealing the decision making process during a patient's care and outcomes of that process.

The result present studies also clarified that majority of nurses have agreed about the importance of safe handling of medication. This finding supported by Gutterman (2006) who mentioned that the importance of patients identification (ID) band include (patients name, medical record no), to prevent a conflict between medicine and tests for each patient. Also mentioned that every unit should have a policy that describe the safe handling of medications through 7 rights of medications.

Concerning the importance of policy, procedure of infection control must be founded in dialysis unit. The result of the present study clarified that the majority of studied nurses have agreed about the importance of policy and procedure of infection control which must be founded in Dialysis Unit. This finding is consistent with Zakzouk (2004) who emphasized that the use of infection control, especially when multiple dose medication vials are used (including vials containing diluents), prepare individual patient doses in a clean (centralized) area away from dialysis stations and deliver separately to each patient.

The findings of the present study revealed that most of the studied nurses have agreed about the importance of patient care. This result is in agreement with Gutterman (2006) who emphasized that importance of patient care especially in assessment and monitoring shall be performed and documented on the treatment record of a patient's condition at least every 30 minutes. This result also supported by Jindal and Chan (2006) who mentioned that the importance of direct patients toward personal hygiene to protect themselves from any complication or infections.

Regarding patient rights, the result of the present study clarified that the majority of studied nurses have agreed about the importance of all items of standard of patient rights. This finding is in agreement with Cooper, (2000) who mentioned that the patient has the right to be informed regarding his case, the patient has the right to

expect his or her psychological status to be maintained at levels appropriate to the procedure being performed. Also this result is consistent with Hassan (2005) who reported that the patients felt motivated and encouraged when they were informed about his status will occur and when someone talks to them.

These findings supported research question "what are the nursing standards that can be applied in hemodialysis unit?"

Concerning the availability of structure standards, the present study indicated that most of the studied nurses had found that all items of the standard of policy and objective were not available. This finding contradicted with Koren (2011) who mentioned that the policy and objective should be written and available to all staff nurses of the hospital to improve the health services.

The result of the present study reported that the most of the studied nurses had found that all items of organizational chart were not available. This finding is congruent with Brown and Harvey (2006) who emphasized that the chart usually shows the managers and sub-workers who make up an organization, finally the chart also shows the relationship between staff in the organization.

The result of the present study indicated that the most of the studied nurses had found that all items of standard of job description were not available. This finding contradicted with Lindsay and Evans (2008) who reported that the job description must be written, defines what is expected of a person in a particular position. Also, job description must be revised periodically to keep them up-to-date with the current changes.

The finding of the present study indicated that more than three quarters of studied nurses had found that all items of human resources standard were not available. This result is in contrast with Hersey and Blanchard (2004) who mentioned that the importance of each unit head nurse have clearly defined and declared tasks and responsibilities.

The result of the present study revealed that about three quarters of studied nurses had found that most items of nursing station standard were not available. For each treatment unit should find a nursing station to allow observation to all patient. This finding contrasts with Campbell (2002) who found that nursing station is one of the most modern nursing facilities in an area of a health care facility. Where nurses and other health care staff sit behind when not working directly with patients and can perform some of their duties. The station has a counter that can be approached by visitors and patients who wish to receive attention from the nurses.

The result of the present study indicated that the most of the studied nurses had found all items of environmental factor standard were not available. This finding disagrees with Youniss (2006) who mentioned that the importance of adequate provision of storage of cleaned and sterile supplies and separated area of adequate size for all the water treatment equipment and filters, separated room for disinfection of portable dialysis equipment.

The finding of the present study reported that most of the studied nurses had found that all items of training standard were not available. This finding is congruent with Koch and Fairly (2007) who mentioned that the key to improving nursing care quality is that importance of nursing training - qualified nursing staff of a dialysis unit consisted of registered nurses. A training program, which shall be provided by the dialysis unit of employment prior to the employee functioning in the position, shall include instruction in anatomy and physiology, fluid and electrolyte balance, principles related to dialysis systems and devices, renal drug therapy, complications of dialysis therapy, emergency medical procedures, asepsis and infection control, dietary management and concepts of chronic end stage renal dialysis rehabilitation and patient education.

Concerning the process standards, the finding of the present study reported that more than three quarters of studied nurses are not in compliance with all items of documentation standard. This finding is congruent with Johnson and Closkey (2008) who reported that accurate documentation of record serves as a description of exactly what happened, the purpose of the documentation is to provide information for communication, education, assessment, research and legal accountability. Finally, reported "care not documented is care not done". At the end if documentation is poorly or inaccurately entered into a medical record, patient may receive improper or potentially harmful care.

The result of the present study reported that more than half of studied nurses are in compliance with all items of standard of safe handling of medication. This finding agreed with Axford and O'callaghan (2008) who mentioned that take medication where there is good light so the medicine label can be seen clearly, store medicine in its original container, do not mix different medications together in the same container, this will make it difficult to identify during an emergency.

The finding of the present study indicated that more than half of studied nurses are in compliance with most items of infection control standard. This result is congruent with Zakzouk (2004) who mentioned that, at least one separated room for dialysis of patients with hepatitis (B) positive, isolation of hepatitis (B) negative. After each patient treatment, it must be cleaned and performed low level disinfection of the environmental

surfaces at the dialysis station, including dialysis bed or chair, countertops and external surfaces of the dialysis machine.

Regarding patient care, the result of the present study revealed that more than half of studied nurses are in compliance with the most items of patient care standard. This finding was congruent with Baer (2007) who mentioned that if dialysis patients not passing any urine we recommend 'they limit the amount of drinks'. To avoid drinking you could try chewing gum, sucking a boiled-sweet or an occasional ice-cube instead of a glass of drink.

The finding of the present study clarified that three quarters of studied nurses are in compliance with majority items of patient rights standard. These findings were congruent with Cooper (2000) who emphasized that patient right to know the name and professional status of those providing services to him and know by name an attending physician responsible for coordinating or primarily responsible for his care, know about his / her illness and participate in the decisions that affect your health and well being.

The finding of the present study revealed that the compliance of all studied staff nurses was moderate in relation to total of all items of proposed developed standards. This may be due to no previous standards in dialysis unit, and facilities are unavailable. This finding is in disagreement with Buargub (2005) who reported that a nurse' adherences to standards health precaution of health care were poor.

The result of the present study indicated negative insignificant correlation between nurse's compliance, age, experience and experience in work place. This result is consistent with Buargub (2005) who had studied about general application of standards health precaution in Tripoli hemodialysis units. Mentioned that there was negative correlation between nurses' age, experience in work place and nurses' compliance, while it contradicted with Youniss (2006) that had thesis about infection control training programme, an approach for nursing staff development. Reported that increasing nurses' age have significant correlation between age and experience in work place.

CONCLUSIONS

Most of studied staff nurses were agreed about all proposed (structure and process) standards (policy and objective standards, organizational chart, job description, human resources, documentation, safe handling of medications, infection control, nursing station, training, environmental factors, patient care and patient right standards), they have moderate compliance according to the proposed nursing standards. There was negative insignificant correlation between nurses' performance and their age, experience and experience in work place.

RECOMMENDATION

For nurses:

- 1- Manual Policies and procedures related to Dialysis Unit should be accessible to all nursing personnel.
- 2- Accountability system must be applied to see nurses (reward and punishment on nursing performance) for applying the proposed standards to raise the performance and improve the services provided.
- 3- 8- Recruit an external examiner to compare nursing performance by proposed standards due to lack of bias and to provide improve nursing care.

For educations:

- 1- The developed Dialysis Unit standard should be applied and communicated to all staff nurses of the Dialysis Unit through workshops, booklet and pursuers.
- 2- In services training program about quality and standards, should be implemented periodically for staff development.
- 3- Implement the orientation program for newly appointed staff nurses in Dialysis Unit.

Further study:

- 1- Assess nursing compliance in Dialysis Unit and its relation to their job satisfaction according to proposed standard.
- 2- Assess patients' satisfaction regarding to nurses' compliance with of proposed standard.

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