# Assessment of Infection Control Knowledge and Practices among Hemodialysis Nursing Staff in Kasr Al-Ainy Hospitals

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## Abstract

*Background:* Hemodialysis (HD) units are considered high risk areas where Blood Stream Infections (BSIs) are common. Infection Control (IC) programs aim to reduce the risk of Healthcare Associated Infections (HAIs) and cross-contamination of the environment. Nursing staff in HD units should be trained and educated about IC measures regularly.

*Aim of the Study:* This study was conducted to assess the baseline knowledge and practices in IC among the nursing staff and to assess IC policies, strategy and implementation in HD units.

*Subjects and Methods:* A cross sectional study design was conducted in the HD units at Kasr Al-Ainy Hospitals, all nurses providing care for chronic HD patients participated in the study (two HD units are present in Kasr Al-Ainy Hospitals, 11 nurses are available in each unit).

*Results:* Regarding the IC knowledge of the nursing staff, the median total score was 49/70 (42-52) in unit (1) and 44/70 (40-56) in unit (2). Regarding the IC practices of the nursing staff, the median total score was 3/17 (1-8) in unit (1) and 6/17 (1-9) in unit (2) for invasive procedures and 0/9 (0-5) in unit (1) and 0/9 (0-4) in unit (2) for non-invasive procedures. Regarding the environmental assessment of HD units, it was found that no documented IC policies and procedures were present, both units didn't follow any immunization policy for HB V and isolation precautions weren't implemented properly. Regarding Focus Group Discussion (FGD) conducted with the nursing staff in HD units, it was found that the main obstacle in compliance with IC practices was absence of well-defined IC team.

*Conclusion:* IC knowledge of the nursing staff was generally low in both dialysis units due to the absence of written IC policies and procedures. IC practices' level of the nursing staff was also low due to the absence of regular IC staff round in both dialysis units.

*Key Words:* *Hemodialysis – Nursing staff – Infection control – Knowledge – Practices.*

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## Introduction

**HEALTHCARE** Associated Infections (HAIs) are the most common complication affecting hospitalized patients and contribute to significant morbidity and mortality [1].

Hemodialysis (HD) units are considered high risk areas where Blood Stream Infections (BSIs) are common. Hepatitis C Virus (HCV) is one of the BSIs that is endemic in HD units in Middle Eastern countries especially in Egypt [2]. BSIs may occur due to unsafe practices as syringe reuse between patients, contamination of Intravenous (IV) fluid and medication vials and lack of adherence to safe injection practices [3].

Infections in the dialysis units can be reduced by strict adherence to Infection Control (IC) measures as aseptic technique, disinfection procedures, equipment maintenance and proper monitoring of all procedures in which microbial contamination may occur. Health Care Workers (HCWs) should be trained and educated about IC measures on regular basis as well as all new employees before beginning work in the dialysis unit [4].

BSIs may occur among HD patients unless IC standards are followed. Thus, the purpose of this study was to assess the knowledge and practices among the nursing staff in HD units to be able afterwards to design and conduct training courses according to needs detected by the baseline assessment. Improving the nurses' IC knowledge and practices will lead to reduction of infections and therefore improving the quality of services provided in the HD units.

## Subjects and Methods

*Study design:* A cross sectional study design.

*Study site and period:* The study was conducted in HD units at Kasr Al-Ainy Hospitals; Kasr Al-Ainy Kidney Center (KKC) and King Fahd Unit (KFU). It was conducted over a period of twelve months from April 2015 till April 2016. Regarding KKC; it recieves only chronic HD patients, it has one section for paid treatment and the other sections for patients treated on the expense of the state. Regarding KFU; it recieves both acute patients (peritoneal/hemodialysis) and chronic HD patients, all sections for chonic patients are treated on the expense of the state while sections for acute patients are free of charge.

*Study population:* All nursing staff providing care for chronic HD patients in dialysis units in Kasr Al Ainy hospitals; 22 nurses (11 nurses from KKC and 11 nurses from KFU).

*Inclusion criteria:*
• Nurses providing care for chronic HD.

• Sex: Both males and females.

*Study tools and data collection technique:*
• Self-administered questionnaire for IC knowledge assessment of the nursing staff. A pilot study was conducted to test the questionnaire among the nursing staff in HD unit in Egyptian Railways Medical Center (ERMC) then the modified form was further used for data collection. It took 30-40 minutes duration for each nurse to fulfill the questionnaire. It included 70 items covering the standard precautions of IC.

• Standardized observational check list for IC practices assessment of the nursing staff regarding invasive procedures which included 17 steps that should be followed in sequence and another checklist for non-invasive procedures which included 9 steps that should be followed in sequence (in each dialysis unit, 50 observations were recorded for invasive procedures and 50 for non-invasive procedures).

• Standardized observational check list for environmental assessment of the dialysis units. It included the following items: Availability of rooms with enough beds, isolation rooms, human resources, hand washing facilities, Personal Protective Equipment (PPE), disinfectants, safe medication preparation area, waste and sharp management, frequency and method of environmental decontamination.

• Focus Group Discussion (FGD) was conducted with nursing staff over 2 sessions in each dialysis unit to detect the obstacles in compliance with IC practices. It included 5 themes (hand hygiene,

PPE, aseptic technique, environmental cleaning & nurses' requirements).

The observational check lists used for environmental assessment of the units, IC practices assessment of the nurses in invasive procedures and in non-invasive procedures were previously used in the international training program of the Egyptian Ministry of Health and Population (MOHP). Before conducting the current study, the checklists were presented to IC professionals and accordingly minor modifications were done to suite the study objectives.

*Statistical analysis:*
• The data was coded and entered using the statistical package SPSS Version 21. The data was summarized using descriptive statistics; number and percentage for qualitative variables and median, minimum and maximum values for quantitative variables which are not normally distributed. Statistical differences between groups were tested using Chi Square test, Mann-Whitney test and Kruskal-Wallis test. Correlation was done to test for linear relations between variables. $p$-values less than or equal to 0.05 were considered statistically significant.

• Total score for nurses was calculated as follow: Each nurse achieved score 1 for correct answer, 0 for wrong answer then a total score for each nurse was calculated, then all total scores of nurses were summarized by median (min-max).

• Qualitative aspect of the study was collected by a FGD conducted with the nursing staff. It was illustrated and analyzed using their own words to detect the main obstacles.

*Ethical considerations:*
Approval of the study protocol was obtained from the Ethical Committee at the Faculty of Medicine, Cairo University. All the included nursing staff were treated according to the Helsinki Declaration of biomedical ethics. Verbal consent was obtained from each nurse after proper orientation regarding the objectives of the study, the data confidentiality, as well as, the impact of the study [5].

## Results

*IC knowledge assessment of nursing staff:*
The studied group of nursing staff included 22 nurses (11 nurses in each dialysis unit).

*Regarding unit (1):*
• 81.8% of nurses (9/11) were females and 18.2% (2/11) were males.

• 36.4% of nurses (4/11) did virology test for themselves routinely nearly every 6 months.

• 72.7% of the nurses (8/11) were vaccinated against HBV.

*Regarding unit (2):*
• 72.7% of nurses (8/11) were females & 27.3% (3/11) were males.

• 54.5% of nurses (6/11) did virology test for themselves routinely nearly every 6 months.

• All nurses were vaccinated against HBV.

*IC knowledge total scores of nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals (Table 1):* Regarding IC knowledge of nursing staff; the median total score was 49 (42-52) in unit (1) and 44 (40-56) in unit (2), insignificant difference was found between them ($p$-value=0.089).

*Relation between working years of nursing staff in each dialysis unit and their total scores Fig. (1):* Regarding unit (1); strong inverse correlation was found between working years of nursing staff in the unit and their total scores in IC knowledge ($p$-value 0.003, $r$ –0.802). However no correlation was found in unit (2) ($p$-value 0.076, $r$ 0.556).

*Infection control practices of nursing staff (invasive procedures):* In each dialysis unit, 50 observations were recorded for invasive procedures.

*IC practices total scores of nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding invasive procedures (Table 2):* Regarding IC practices of nursing staff in invasive procedures; the median total score was 3 (1-8) in unit (1) and 6 (1-9) in unit (2), insignificant change was found between them ($p$-value=0.3 5 1).

*Relation between the time of the shift and the total scores of the nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding the invasive procedures (Table 3):* Significant difference was found between the time of the shift and the median total scores of the nursing staff in dialysis unit (1) ($p$-value <0.001) however no significant difference was found in dialysis unit (2).

*Percent of correct practices by nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding invasive procedures (Table 4):* All steps related to proper hand hygiene weren't practiced by nursing staff in both units in all observed invasive procedures. Using new sterile device for each patient was practiced by nursing staff in both units in all observed invasive procedures.

*Infection control practices of nursing staff (non-invasive procedures):* In each dialysis unit, 50 observations were recorded for non-invasive procedures.

*IC practices total scores of nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding non-invasive procedures (Table 5):* Regarding IC practices of nursing staff in non-invasive procedures; the median total score was 0 (0-5) in unit (1) and 0 (0-4) in unit (2), insignificant change was found between them ($p$-value=0.897).

*Relation between the time of the shift and the total scores of the nursing staff in dialysis unit (1) & (2) at Kasr Al -Ainy Hospitals regarding the non-invasive procedures (Table 6):* Significant difference was found between the time of the shift and the median total scores of the nursing staff in dialysis unit (1) ($p$-value 0.027) however no significant difference was found in dialysis unit (2).

*Percent of correct practices by nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding non-invasive procedures (Table 7):* All steps related to proper hand hygiene weren't practiced by nursing staff in both units in all observed non-invasive procedures.

*Environmental assessment of HD units:*
*1- Basic information:*
• Regarding unit (1); it includes 4 rooms, one isolation room for HBV positive patients, one isolation room for HCV positive patients and two rooms for HCV negative patients. In the morning and mid shifts, one nurse is assigned to every 4 patients however in the night shift one nurse is assigned to every 8 patients.

• Regarding unit (2); it includes 3 rooms, one isolation room for HBV positive patients, one isolation room for HCV positive patients and one room for HCV negative patients. In the morning and mid shifts, one nurse is assigned to every 3 patients however in the night shift one nurse is assigned to every 5 patients.

*2- Infection control activities:*
• Regarding both units (1) & (2); no written IC policies and procedures are present. No immunization policy for HBV is followed either to the patients or the staff. Isolation precautions are not implemented properly since no Healthcare Workers (including physicians, nurses and workers assigned for environmental cleaning or waste collection) are dedicated to each of HBV positive patients, HCV positive patients or HCV negative patients in each shift. All available nurses provide health care for all patients haphazardly in the same shift.

3- *Availability of disinfectants:*

• Regarding both units (1) & (2); environmental disinfectants as alcohol, chlorine-based solutions and detergents are available. Skin antiseptics as betadine is available however Chlorhexidine is unavailable although it is recommended because it reduces the risk of BSIs.

4- *Availability of personal protective equipment:*

• Regarding both units (1) & (2); sterile gloves, non-sterile gloves and gowns were available however masks, heavy utility gloves and eye goggles were unavailable.

5- *Safe intravenous fluid and medication preparation:*

• Regarding both units (1) & (2): Medications as multidose vial injection are prepared in the patients' treatment area; more than one patient share is used in the same vial. In unit 1 a new syringe and needle is used each time even if for the same patient however in unit 2 only the needle is changed without changing the syringe.

6- *Waste and sharps management:*

• Regarding both units (1) & (2): Infectious hazardous waste is separated from nonhazardous waste at the point of origin. Sharps are separated alone in thick plastic containers. Waste is stored in an intermediate storage area till being collected. Central staff is assigned to collect waste daily from the units in closed bags.

7- *Environmental cleaning:*

• Regarding unit (1): Floors are cleaned once daily in the morning and when necessary with water, detergent and chlorine solution (without calculating the proper amount). Tables are cleaned once every few days with water and detergent. Patients' beds are cleaned weekly with chlorine based solution (every Friday). Linens are changed after each patient and are cleaned weekly in the unit's washing machine with water, detergent and disinfectant (chlorine solution).

• Regarding unit (2): Floors are cleaned once daily in the morning and when necessary with water and dissolved chlorine tablets. Tables are cleaned once every few days with water and dissolved chlorine tablets. Patients' beds are cleaned weekly with water and dissolved chlorine tablets (every Friday). Linens are not changed after each patient, they are cleaned weekly in the unit's washing machine with water and detergent, no disinfectant is added (chlorine solution is unavailable).

*Focus group discussion with nursing staff:*

1- Regarding FGD conducted with the nursing staff in HD units, it was found that the main obstacles in compliance with IC practices were absence of well defined & effective IC team to supervise nurses' performance, work overload and low staff to patient ratio.

2- Among the nurses requirements for better compliance with IC precautions were continuous IC lectures to be provided, supervision by an IC specialist and more human resources to be employed in the units.
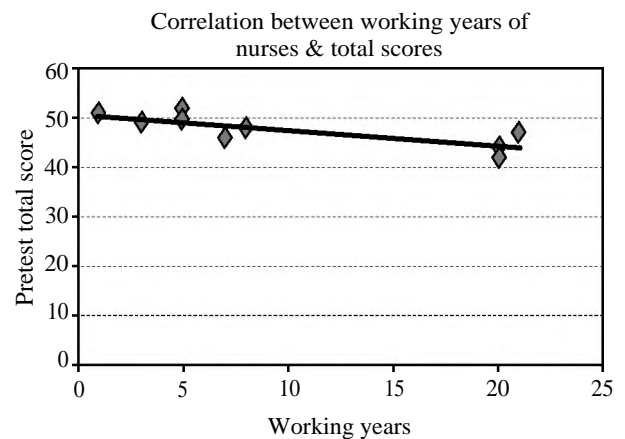


Fig. (1): Relation between working years of nursing staff in dialysis unit (1) at kasr Al-Ainy Hospitals and their total scores in IC knowledge.

Table (1): IC knowledge total scores of nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals.

| Total score | Unit (1) | Unit (2) | *p*-value |
|---|---|---|---|
| *Total score (70):* | | | |
| Median (min-max) | 49 (42-52) | 44 (40-56) | 0.089 |

Table (2): IC practices total scores of nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding invasive procedures.

| Total score | Unit (1) | Unit (2) | *p*-value |
|---|---|---|---|
| *Total score (17):* | | | |
| Median (min-max) | 3 (1-8) | 6 (1-9) | 0.351 |

Table (3): Relation between the time of the shift & the total scores of the nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding the invasive procedures.

| Total score | Morning shift | Mid shift | Night shift | *p*-value |
|---|---|---|---|---|
| *Unit (1) total score (17):* | | | | |
| Median (min-max) | 1 (1-8) | 3 (3-3) | 4 (3-7) | <0.001 |
| *Unit (2) total score (17):* | | | | |
| Median (min-max) | 6.5 (6-9) | 7 (1-8) | 5 (1-9) | 0.28 |

Table (4): Percent of correct practices by nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding invasive procedures.

| Standard steps in sequence (invasive procedures) | Unit (1) | | Unit (2) | |
|---|---|---|---|---|
| | No (50) | % | No (50) | % |
| Washing hands before the practice | 0 | 0.0 | 0 | 0.0 |
| Selecting the proper hand hygiene agent | 0 | 0.0 | 0 | 0.0 |
| Performing proper steps of hand rubbing | 0 | 0.0 | 0 | 0.0 |
| Proper hand drying | 0 | 0.0 | 0 | 0.0 |
| Presence of assistant | 0 | 0.0 | 0 | 0.0 |
| Assistant performed hand hygiene | 0 | 0.0 | 0 | 0.0 |
| Using separate sterile tray in this practice | 0 | 0.0 | 12 | 24.0 |
| Using new sterile device for the patient | 50 | 100.0 | 50 | 100.0 |
| Wearing new gloves | 11 | 22.0 | 35 | 70.0 |
| Selecting the proper type of gloves | 0 | 0.0 | 4 | 8.0 |
| Avoid touching any environmental surface | 3 | 6.0 | 30 | 60.0 |
| Disinfection of procedure site | 32 | 64.0 | 39 | 78.0 |
| Selecting proper disinfecting agent | 32 | 64.0 | 39 | 78.0 |
| Using the no touch technique | 10 | 20.0 | 2 | 4.0 |
| Gloves removal after the practice | 9 | 18.0 | 31 | 62.0 |
| Proper gloves removal | 0 | 0.0 | 23 | 46.0 |
| Washing hands after gloves removal | 0 | 0.0 | 3 | 6.0 |

Table (5): IC practices total scores of nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding non-invasive procedures.

| Total score | Unit (1) | Unit (2) | *p*-value |
|---|---|---|---|
| *Total score (9):* | | | |
| Median (min-max) | 0 (0-5) | 0 (0-4) | 0.897 |

Table (6): Relation between the time of the shift & the total scores of the nursing staff in dialysis unit (1) & (2) at Kasr Al-Ainy Hospitals regarding the non-invasive procedures.

| Total score | Morning shift | Mid shift | Night shift | *p*-value |
|---|---|---|---|---|
| *Unit (1) total score (9):* | | | | |
| Median (min-max) | 0 (0-3) | | 0 (0-5) | 0.027 |
| *Unit (2) total score (9):* | | | | |
| Median (min-max) | | 0 (0-4) | 0 (0-4) | 0.848 |

Table (7): Percent of correct practices by nursing staff in dialysis units (1) & (2) at Kasr Al-Ainy Hospitals regarding non-invasive procedures.

| Standard steps in sequence (non-invasive procedures) | Unit (1) | | Unit (2) | |
|---|---|---|---|---|
| | No (50) | % | No (50) | % |
| Washing hands before the practice | 0 | 0.0 | 0 | 0.0 |
| Selecting the proper hand hygiene agent | 0 | 0.0 | 0 | 0.0 |
| Performing proper steps of hand rubbing | 0 | 0.0 | 0 | 0.0 |
| Proper hand drying | 0 | 0.0 | 0 | 0.0 |
| Wearing new gloves | 7 | 14.0 | 16 | 32.0 |
| Selecting the proper type of gloves | 7 | 14.0 | 16 | 32.0 |
| Gloves removal after practice | 7 | 14.0 | 16 | 32.0 |
| Proper gloves removal | 2 | 4.0 | 16 | 32.0 |
| Washing hands after gloves removal | 2 | 4.0 | 0 | 0.0 |

## Discussion

Prevention of infection is within the nurses' scope of practice. HCWs and nurses in particular are constantly exposed to microorganisms while performing different procedures. Therefore they should have sound knowledge and strict adherence to IC standards [6].

Accordingly this study was conducted aiming to reduce infections acquired within Kasr Al-Ainy dialysis units through assessing the IC program in these units including the nurses' knowledge and practices. This is considered the cornerstone in improving the nurses' compliance to IC measures.

*Infection control knowledge assessment of nursing staff:*

IC knowledge of the nursing staff was generally low with a median total score 49/70 (42-52) in dialysis unit (1) and 44/70 (40-56) in unit (2) and this could be attributed to the absence of written IC policies and procedures and no IC training courses are held for nursing staff in both units. In 2015 a study was conducted in Egypt highlighted that low level of IC knowledge among nursing staff is due to absence of restrict policy, lack of continuous health education and unavailability of resources. Also it stated that IC manual should be available and clear to all HCWs particularly nurses [7].

The current results were consistent with a study conducted in Oman showing low IC knowledge of nursing staff in a HD unit as their baseline average total score was 52.17 ±9.63 because no routine educational programs were implemented in the unit so the nursing staff IC knowledge weren't updated [8].

Also the current results were consistent with another study conducted in India to assess the effectiveness of Structured Teaching Program (STP) regarding IC in HD unit. The baseline average total score of the registered nurses was low 11.47/24 ± 3.55 because no priority was given to refresh or update the HCWs IC information as mentioned in the study [9].

Regarding the relation between years of experience of the nursing staff and their total scores in the current study; strong inverse correlation was found in unit (1) (*p*-value 0.003, *r* –0.802) indicating that the younger generations are much more updated and knowledgeable in IC than the older ones and accordingly paying more attention to the older staff is required to change any misconception and to update their knowledge. However in unit

(2) no correlation was found (*p*-value 0.076, *r* –0.556).

These results were compared with a study conducted in a HD unit in Oman showing no statistically significant association between years of experience of their nursing staff and the pre-test scores (*p*=0.28, *r*=0.15) [8]. Also results were compared with another study conducted in governmental hospitals in Palestine showing no statistically significant differences between mean knowledge scores of the nursing staff towards years of experience (*p*=0.188) [6].

*Infection control practices assessment of nursing staff:*

*1- Regarding invasive procedures:*

IC practices' level of the nursing staff was generally low with a median total score 3/17 (1-8) in dialysis unit (1) and 6/17 (1-9) in unit (2) and this could be attributed to the absence of regular IC staff round in both dialysis units and therefore no proper supervision or onjob training is provided to the nursing staff. In Egypt a study was conducted in a Surgical Unit dealing with burns at a University Hospital highlighted the importance of the in-service training and that it must be stressed and provided for nurses working in critical units as dialysis units and ICUs to notify and change any improper practice done by the nurses immediately and thus improve their practices aiming to reduce HAIs in such critical areas [7].

The current study ensured the absence of efficient IC team and lack of supervision in both dialysis units and this was shown in the relation between the time of the work shift and the median total scores of the nursing staff. Regarding unit (1); the best nurses' performance was achieved in the night shift as the median total score was significantly higher in the night rather than the mid and the morning shifts (4 Vs. 3 & 1, *p*<0.001). However no significant difference was found in unit (2). These results suggested that the variations in the scores achieved in the shifts were subjective related to the nursing staff available in each shift.

*2- Regarding non-invasive procedures:*

IC practices' level of the nursing staff was generally low with a median total score 0/9 (0-5) in dialysis unit (1) and 0/9 (0-4) in unit (2). This reflects that the nursing staff had misconceptions; that applying IC standards are unnecessary with the non-invasive procedures because the risk of acquiring infection is low and that since the supplies such as the hand cleaning agents and the PPE are not sufficient enough so it's better to save them

for invasive procedures. In 2009 a study was conducted in Saudi Arabia about standard precautions of IC, it highlighted that lack of resources, training opportunities, and excessive workload were the main causes that HCWs don't implement standard precautions of IC during routine tasks [10].

Also in 2012 a study was conducted in Egypt in a Woman's Health Center-Assiut University Hospital to assess nurses' practices showed that most of nurses did not carry out certain procedures according to the IC standard precautions in appropriate manner as hand washing, wearing and removing gloves and room cleaning. These behaviors could be attributed to the lack of nurses' knowledge and lack of disposable supplies, cleaning solutions and protective barriers [11].

*Environmental assessment of HD units:*

Environmental assessment of both units showed that there are some important IC policies weren't implemented; no immunization policy for HBV is followed either to the patients or the staff, also isolation precautions are not implemented properly. This could be attributed to the absence of documented IC policies and procedures which show the quality standards that should be followed. As any healthcare setting, environmental disinfectants as alcohol, chlorine-based solutions and detergents, skin antiseptics and basic personal protective equipment as sterile gloves, non-sterile gloves and gowns were available in both units. Waste and sharps were segregated and stored properly in both units and collected daily and this reflects the awareness of HCWs regarding the risk of acquiring infections from waste especially the sharps. However the frequency and technique of environmental cleaning were not followed properly in both units and this could be explained by the lack of supervision from the IC team.

These results were compared with a study conducted in hemodialysis units in Qalyubia Governorate which showed that no immunization policy was followed as HCWs had been vaccinated against HBV in only half of the studied units, however strict isolation policy for HCV-infected and HBV-infected patients was implemented in all the studied units. Most of studied dialysis units had enough basins, soap, skin antiseptics and environmental disinfectants, yet there was significant noncompliance of all HCWs with standards of hand hygiene. Regarding the personal protective equipment; sterile gloves were available in about half of the dialysis units, whereas non-sterile gloves were available in all units and gowns were available in most of the studied units. Regarding waste and sharps

management, it was found that only 63% of units separated medical waste from regular waste, correct procedures for waste collection and storage were followed in 78% of units and no enough safety boxes in 68% of the studied units [12].

Finally, the current study ensured that introducing IC theoretical and practical training course to the nursing staff on regular basis is mandatory.

*Conclusion:*

The HD units' environment didn't suit properly the standard IC measures. IC knowledge and practices of the nursing staff was generally low due to the absence of written IC policies and procedures, no IC training courses are held for nursing staff and absence of regular supervision and on-job training.

*Recommendations:*

- Reviewing and implementing the IC policies and procedures according to the National Guidelines for IC by MOHP.

- Enhancing the role of the IC team available in the hospital by assigning an IC link nurse in each dialysis unit who should report any problem or deficiency to the IC team who would further raise the issue to the IC committee of the hospital.

- Introducing HBV immunization policy in both dialysis units for both the patients and HCWs.

- Implementing isolation policy properly by dedicating different HCWs to each of HBV positive patients, HCV positive patients and HCV negative patients in the same shift.

- Introducing regular IC training and refreshing courses to nursing staff.

- Routine evaluation of nursing staff practices according to IC standards.

- Recommendation for further research concerning:
  - Evaluation of IC programs in other clinical settings.
  - Assessment of IC knowledge and practices among nursing staff in HD units after conducting IC training courses.

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# تقييم المعرفة والممارسات لدى هيئة تمريض الغسيل الكلوى بمكافحة العدوى فى مستشفيات القصر العينى

تعتبر وحدات الغسيل الكلوى من الأماكن عالية الخطورة حيث آن المرضى معرضون للإصابة بالعدوى المنقولة عن طريق الدم. تهدف برامج مكافحة العدوى إلى الحد من مخاطر العدوى المرتبطة بالرعاية الصحية وتلوث البيئة. وينبغى تدريب وتثقيف هيئة التمريض فى وحدات الغسيل الكلوى على مبادئ مكافحة العدوى بشكل منتظم.

وقد آجريت هذه الدراسة لتقييم المعرفة والممارسات الأساسية لدى هيئة التمريض فى مكافحة العدوى فى وحدات الغسيل الكلوى وآيضا لتقييم سياسات وإستراتيجية مكافحة العدوى وكيفية تنفيذها.

تم تصميم هذه الدراسة التحليلية فى وحدتى الغسيل الكلوى فى مستشفيات القصر العينى، شارك فى هذه الدراسة جميع هيئة التمريض الذى يوفر الرعاية الصحية لمرضى الغسيل الكلوى المزمن (١١ فى كل وحدة).

وكانت النتائج الرئيسية للدراسة كالتالى: فيما يتعلق بمعرفة التمريض فى مكافحة العدوى، وجد آن متوسط النتيجة الإجمالية كان ٤٩/٧٠ (٤٢-٥٢) فى الوحدة (١) و٤٤/٧٠ (٤٠-٥٦) فى الوحدة (٢). وفيما يتعلق بممارسات التمريض فى مكافحة العدوى، وجد آن متوسط النتيجة الإجمالية كان ٣/١٧ (١-٨) فى الوحدة (١) و٦/١٧ (١-٩) فى الوحدة (٢) للإجراءات العميقة و٩/٠ (٠-٥) فى الوحدة (١) و٩/٠ (٠-٤) فى الوحدة (٢) للإجراءات غير العميقة. فيما يتعلق بتقييم البيئة داخل وحدتى الغسيل الكلوى وجد آنه لا توجد سياسات وإجراءات موثقة لمبادئ مكافحة العدوى، لا تتبع وحدتى الغسيل الكلوى آى سياسة للتطعيم ضد إلتهاب الكبد الفيروسى B لا تتبع وحدتى الغسيل الكلوى إحتياطات العزل بشكل دصحيح. فيما يتعلق بمجموعات النقاش البؤرية التى آجريت مع هيئة التمريض فى وحدتى الغسيل الكلوى وجد آن المعوقات الرئيسية فى الإلتزام بممارسات مكافحة العدوى كانت غياب فريق محدد وفعال لمكافحة العدوى.

ويستنتج من الدراسة الحالية آن مستوى المعرفة لدى هيئة التمريض فى مكافحة العدوى منخفض بشكل عام فى وحدتى الغسيل الكلوى نظرا لعدم وجود سياسات وإجراءات موثقة لمبادئ مكافحة العدوى، وكان آيضا مستوى الممارسات لدى التمريض منخفض بسبب غياب مرور دورى من قبل فريق مكافحة العدوى فى وحدتى الغسيل الكلوى.