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Nurses' Practices toward Aseptic Techniques at Kidney Transplant Center in Baghdad City

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Abstract

The study aims to evaluate nurses' practices toward using Aseptic Techniques, and to identify the relationships between nurses' demographics including (age, gender, education level, and years of experiences in kidney transplantation units) and their practices toward aseptic techniques. A quasi-experimental study, quantitative design (One-group) was conducted on nurse's practice toward aseptic techniques in kidney transplant units. It was carried out in order to achieve the early stated objectives with the application of pretest and posttest. A non-probability (purposive) sample of (30) nurses who are working in kidney transplant unit, that's selected based on the study criterion, and after obtaining oral consent from them, those nurses were distributed in kidney transplant units at Medical City complex. The study Instrument was composed of two Parts: The First Part is concerned with the socio-demographic characteristics, and the second Part includes Nurses' Practices. Content validity of the instrument was established through a panel of (12) experts. Reliability of the instrument scales determined the internal consistency by using test-retest approach through the computation of Pearson correlation coefficient of the scale which was $r=0.83$ for nurse' practices. Results have been analyzed through the use of SPSS "Statistical Package for Social Sciences" model 24.0 by using descriptive and inferential statistical methods. Findings of the present study revealed that most of the samples were within the age of (40 - 49) years who were accounted (40%). It has been presented that there were significant differences in the mean of the study sample between the pre and post test procedures, revealing a significant improvement in nurses' practices regarding using of Aseptic Techniques. Moreover, a high significant difference was also presented among the whole study sample at pre and post-test practices, t-test value (8.462) at p value (.000). The study recommended that nurses should be committed to follow and apply standards of using the personal protective equipment, sharing in training sessions, improve practices through self-learning and training, and establishing future studies to measure nurses' practices toward using personal protective equipment at all healthcare settings in Iraq

. Key word: Nurses, practice, Aseptic Techniques, kidney transplant.

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Introduction

A kidney transplant is a medical operation in which the lower belly is placed with a healthy kidney from either a live or deceased donor. It is a treatment for chronic kidney disease, not a cure. For those that are considered acceptable candidates for a transplant, that is the therapy of choice. The immune system of patients would seek to destroy the new kidney as if it were a bacterium or virus. Drugs would then be given to inhibit the immune response (immunosuppression) of patients. In the emergency room, the initial doses of medicines will be delivered. They will be at risk for infection as a result of this immunosuppression. And once you are outside the bed and wandering around the hospital floor, you may need to wear a mask. This is to defend patients from pathogens. Especially here in the hospital and at home, the following procedures must be adhered to protect against infections. Members of the Transplant Infectious Disease Team have developed these procedures to reduce exposure to bacteria that could be dangerous to recipients of transplants. Infection and rejection are the two main complications which may arise following transplant surgery. Infection: While there may be an infection in a surgical incision. That this site stays clean and dry is quite significant. While at the hospital, there will be a sterile dressing protecting the incision most of the time. This is an irritation at the incision site if any redness, tenderness, or drainage at the incision site is detected. (Boston Medical Center, 2012).

Infectious diseases related to healthcare occur during the delivery of health care, are not present at the time of admission, and involve infections that exist among healthcare workers due to interaction in the workplace. In developed nations, 1 in 10 patients were expected to experience harm while pursuing medical attention and the number in emerging countries may be up to 20 times higher. HAIs in the United States of America have been estimated to spend \$28.4 to \$45.0 billion every year for healthcare costs, while HAIs in the England cost more than £ 1 billion a year. (Public Accounts Committee, House of Commons 2009, Scott 2009).

A mixture of techniques, including environmental protection and washing, the use of separation measures, and the use of personal protective equipment (PPE), where applicable, will deter most HAI incidents. Despite evidence that good separation and hygiene practices are effective in minimizing infection spread, lines of evidence suggest that commitment to separation steps is poor and can vary depending on the operating area and the form of isolate provided (World Health Organization, 2003, WHO, 2009).

Aseptic technique is a collection of particular activities and procedures that are carried out with the goal of reducing exposure of pathogens, under closely controlled conditions. Aseptic technique is used to maximize and preserve asepsis, the absence of human

pathogens in the clinical environment, especially in intensive care units. The purpose of the aseptic procedure is to protect the patient from the spread of infection between them and protect medical materials. In any clinical setting, the theory of asepsis can be applied. Via contact with the environment, staff, or equipment, pathogens can introduce infection to the patient. The atmosphere contains potential hazards that, by movement, contact, or proximity, can spread pathogens. Interventions such as regulating air flow that help reduce environmental impacts by reducing operating theatre flow, separating a patient to protect airborne emissions, or using close to zero-particle garb (Pankaj, et al, 2014).

Nurses have an important role in helping patients have immunosuppressive regimens during hospitalized periods to minimize exposed to nosocomial infections to survive their lives by using high sterile techniques with medical and nursing care (NHMRC, 2019).

Material and Methods

A quantitative research approach has been used for this study. The quasi-experimental design was conducted on nurses who work at kidney transplant unit at Baghdad City Complex. It was conducted to evaluate nurses' practices regarding aseptic techniques in kidney transplant units. It was carried out in order to achieve the initial stated objectives. The study started from December 7th, 2019 to September 2nd, 2020. Participants were verbally informed about the aims of the study and had been asked to

participate voluntarily. They also had been informed that they could refuse to answer a certain question or withdraw from the study at any time. Emphasis was placed on creating a suitable environment during interview using good communication skills with participants.

The present study was conducted in kidney transplant center in medical city complex at Baghdad city. A non – probability (purposive) sample of (30) nurses (males and females), who were working in kidney transplant units, were selected from (50) Nurses in these center.

The researcher constructed the questionnaire thorough reviewing of previous literature and related studies. The study instrument comprised of two parts; Socio-Demographic Data which was comprised of seven items relative to the gender, age, educational status, years of experience, training of program, and number of training courses; and Nurses' practices Form which was comprised of (45) items that concerned with nurses' practices to assess the nurses practices in kidney transplant center. Content validity for the early developed program and the study instruments were determined using panel of (12) experts. A preliminary copy of questionnaire was designed and presented to (12) experts for the determination of its validity. They were (7) faculty members from College of Nursing – University of Baghdad, (1) faculty member from College of Medicine / university of Kirkuk, (2) faculty member internist (nephrologists) from

Disease and kidney transplant Center/ Medical City complex, (1) faculty member surgeon from Disease and kidney transplant Center/ Medical City complex, (1) Nursing specialist in adult nursing from Disease and kidney transplant Center/ Medical City complex.

A purposive sample of (5) nurses was selected from kidney transplant units of working in center to achieve the purpose of pilot study. It was applied on the nurses who had the same criteria of the original study sample and started from December 5th, 2019 to Jan 4th, 2020 to determine the internal consistency of questionnaire related practices of nurses concerning nursing practices in kidney transplant units.

The researcher determines the internal consistency by using test – retest through the

computation of Pearson correlation coefficient of the scale which was $r = 0.81$ for nurse’s practices. Data were collected through chick list questionnaire with the study sample by using a constructed questionnaire. Nurses were observed while they were working in their units to provide care concerning nursing intervention by using concealed observational technique. Data were collected from February 2nd2020 to march 6th2020.

The data were analyzed by using SPSS (Statistical Package for Social Sciences) version 24.0 application of the statistical analysis system. The descriptive data analysis includes Frequency (f), Percentage (%), Mean, and Standard Deviation. The inferential data analysis includes Pearson Correlation Coefficient, t-test, and ANOVA Table test with significance of p value ≤ 0.05 .

Results:

Table (1): Distribution of the Study Samples according to the Demographical Data.

Variable	Groups	Results	
		F.	%
Age Groups	20 – 29	7	23.3
	30 – 39	8	26.7
	40 – 49	12	40
	50 years and over	3	10
	Total	30	100
	$\bar{x} \pm SD$	37.9 + 8.77	

Gender	Male	20	66.7
	Female	10	33.3
	Total	30	100
Education Level	Nursing School Graduate	1	3.3
	Secondary Nursing School Graduate	4	13.3
	Nursing Institute Graduate	20	66.7
	Nursing College Graduate	4	13/3
	Higher Education	1	3.3
	Total	30	100
	1 – 5	12	40
Years of Experience in Hospital	6 – 10	5	16.7
	11 – 15	0	0
	16 and over	13	43.3
	Total	30	100
	1 – 5	7	23.3
Years of Experience in Kidney Transplant Unit	6 – 10	5	16.7
	11 – 15	5	16.7
	16 and over	13	43.3
	Total	30	100
	1 – 5	7	23.3
Sharing in training sessions inside Iraq	Yes	25	83.3
	No	5	16.7
	Total	30	100
Sharing in training sessions outside Iraq	Yes	2	6.7
	No	28	93.3
	Total	30	100

It is clear from the table (1) of demographic characteristics for nurses, showed that the majority of the study sample (40 percent) were within age group (40 – 49) years old. Moreover, most of the study group (66.7 percent) were male and the remaining were female. The majority of the study sample (66.7 percent) have nursing institute graduates. In addition, 43.3 percent of the study sample have experience in hospital in about 16 years and

over; while, 40 percent of the study sample have one to five years of experience in hospital. Furthermore, approximately 43.3 percent of the study sample have experience in kidney transplant unit in about 16 years and over. The findings also showed that the highest percent of the study sample 83.3 percent were sharing in training sessions inside Iraq; while, 93.3 percent of the study sample were not sharing in training sessions outside Iraq.

Table (2): pretest practice score for the study sample

Main domain	N	Pre-test			t	P- value	Sig.
		M.S	SD	df			
Part one: Hand Hygiene	30	1.0	.00	29	20.14	.000	L.S
Part two: Using Personal Protective Equipment	30	1.76	.43	29	8.462	.000	L.S
Part Three: Handling Sharp Objects	30	1.26	.449	29	7.477	.000	L.S
Part four : Handling Medical Trash	30	1.5	.50	29	10.42	.000	L.S
Part five: Cleaning the Environment	30	1.3	.466	29	11.366	.000	L.S
Part Six: Recording the Aseptic techniques	30	1.26	.44	29	16.89	.000	L.S
Total	30	1.56	.504	29	15.272	.000	L.S

N= number, M.S= mean of score, SD= standard deviation, df= degree of freedom, t= t.test, L.S= low-significant at P ≤ 0.05

Table (2) showed that there were significant differences in pretest of the study sample in all main domains at (P.value =.000).

Discussion

Results in table (1) presented that The results of the present analysis have shown that age group sample were (40 – 49) years old who accounted for (40%), the age group of less than 39 years

old of age accounted for 50 %. The research findings revealed that the most of the samples were males (66.7%) and the remaining were females. Concerning to the educational level of nurses, the greater percentage (66.7%) has a diploma in nursing, the remaining (13.3%) graduated from the College of Nursing and (13.3%) graduated from secondary nursing school. Regarding the years of experience in kidney transplant units, the results indicate that

most of the participating nurses were within years of experience in kidney transplant units (16 years and over) accounted for (43.3%), the remaining (23.3%) of the nurses were within (<5) years and (16.7) of the nurses were within (6-10) and (11-15) years of experience in kidney transplant units. The findings also showed that the highest percent of the study sample 83.3 percent were sharing in training sessions inside Iraq; while, 93.3 percent of the study sample were not sharing in training sessions outside Iraq. In their report, the findings of Jissir and Hassan, 2015, notice that the majority of nurses are 20-29 years of age. In their report, Haitham, 2016, the investigator agrees with these findings with 75 percent of the sample male gender. In their survey conducted on 77 nurses to assess the nurse's expertise and experience on administering basic measures in intensive care units in Egyptian cancer hospital, Eskander, et al., 2013 concluded that the level of education for most nurses in their survey was nursing college, according to researcher findings, according to the plurality of study sample of nursing graduation diplomas.

The findings as shown in table (2) indicate that there were positive and highly significant differences at P value (0.000) between the nurse's practices respondents in the pretest assessment in concerning Aseptic techniques in kidney transplant units. In the pre-test evaluation of the education scheme, the realistic respondents show that there were poor score outcomes (M.S=1.56), which indicates that nurses had insufficient procedures in kidney transplant units involving Aseptic strategies. The researcher indicates that these ineffective procedures because all of them did not undergo appropriate training sessions as identified according to the study criteria for practices on optimal practices related to Aseptic strategies in kidney transplant units.

Conclusions

Nurses' practices in general were poor before in pre-test, which included their practices. They needs to implementation of an educational program toward aseptic techniques in kidney transplant units. The findings of this study indicate that the educational program for nurses was effective after the exposure to such a program, (their practice toward using personal protective equipment). Emphasis should be put on the managers of hospitals, and nursing affairs managers to monitor and follow-up, support and supervise nurses while they are working in their units. Giving the nurses of the patients' knowledge and practices for good preparing before and after any nursing procedure in the kidney transplant units. Emphasis is necessary on hospital managers and administrators on nursing to reward and incentive nursing staffs that are efficient and loyal in their work and to reward the good ones and punish the careless in their duties.

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