

Effectiveness of an Educational Program on Nurses' Practices toward Using of Personal Protective Equipment at Kidney Transplant Center in Baghdad City

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Abstract

The study aims to evaluate nurses' practices toward using personal protective equipment, 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 Pretest - Posttest) 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's 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 personal protective equipment. 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, personal protective equipment, kidney transplant.

Introduction

Infections associated with healthcare are infections acquired as a direct or indirect by health workers outcome. International evidence exists to indicate that a major infection burden exists among long-term care patients, but there are few published research on the incidence of infection in Australia ¹. There are about 165,000 HAIs per year in Australian acute health care facilities. This makes HAI the most common complication in hospital patients. As well as causing

patients and their families' needless pain and discomfort, these negative effects increased hospital visits and are pricey for the health system ². Around Seven per cent of inpatients will receive Hospital acquired infection, the issue does not only impact patients and staff in hospitals. Any person who works in or joins a healthcare facility is at risk. Health-related infection, however, is a potentially preventable adverse occurrence rather than an unexpected risk, and through successful infection prevention and control, the incidence of HAIs can be greatly reduced. ¹

Outbreaks associated with a wide variety of bacterial, fungal and viral infections due to widespread and person-to-person exposures are prevalent in adult and adolescent ICUs, including kidney transplant units (CDC, 2019). Training and encouragement are perhaps the most critical ways in which nurses will impact patients during the entire transplantation process, from first joining the waiting list to the operating phase itself to the follow-up care level, there is a need for detailed nursing feedback. (KDIGO, 2009) ⁶.

Transplantation procedure more cost-effective than hemodialysis with lower morbidity and better quality of life, transplantation has revolutionized the management of end stage renal disease. For chronic kidney disease, it is the recommended therapy. While effective transplantation is the second type of therapy for (ESRD), it possibly most closely approximates a return to physical pre-ESRD functioning and typically only involves the use of immunosuppression medication ⁶.

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 ².

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 (pre-test and post-test) was conducted on nurses who work at kidney transplant unit at Baghdad City Complex. It was conducted with application of pre-test and post-test approach to evaluate nurses' practices regarding using the personal protective equipment, in addition to the application of education program. It was carried out in order to achieve the initial stated objectives. The study started from December 7th, 2018 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 (55) Nurses in these center. All selected nurses were exposed to the educational program.

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 the program and 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

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

Years of Experience in Hospital	1 – 5	12	40
	6 – 10	5	16.7
	11 – 15	0	0
	16 and over	13	43.3
	Total	30	100
Years of Experience in Kidney Transplant Unit	1 – 5	7	23.3
	6 – 10	5	16.7
	11 – 15	5	16.7
	16 and over	13	43.3
	Total	30	100
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.

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.

Conclusions

Nurses' practices in general were poor before the implementation of an educational program in pre-test, which included their practices. There were significant improvement in Nurses practices after the implementation of an educational program in post-test. 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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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing and all experiments were carried out in accordance with approved guidelines.

References

1. Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra: National Health and Medical Research Council (2019).
2. Pankaj P. A study to assess the knowledge and practice of aseptic techniques applied in nursing practice among staff nurses working in selected hospital, Ahmednagar, VIMS health science journal. 2014; 1(2).
3. Nancy A. Principles and practice of nursing, 6th edition N.R. Publishing, 2008: 113-121.
4. Dider A. Hand hygiene and aseptic in the emergency department, American journal of infection control. 2009; 104:170-174.
5. Keshav S. Community Health Nursing, 2nd edition NR publication, 2006; 454.
6. Kidney Disease: Improving Global Outcomes (KDIGO) Transplant Work Group. KDIGO clinical practice guideline for the care of kidney transplant recipients. American Journal of Transplant. 2009; 3: 1-155.
7. World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks. WHO Press; Geneva, Switzerland: 2009a.
8. World Health Organization. Improved hand hygiene to prevent health care-associated infections. 2007.
9. World Health Organization. WHO policy on TB infection control in health-care facilities, congregate settings and households. 2009b.