Effectiveness of Continuing Nursing Education Program on Nursing Staffs' Knowledge at Kidney Transplantation Units in Baghdad Teaching Hospitals

تأثير برنامج تعليم تمريضي مستمر على معارف الملاك التمريضي في وحدات زرع الكلى في مستشفيات بغداد التعليمية

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المستخلص:

الهدف: لتقييم أثر برنامج التعليم التمريضي المستمر على معارف الملاك التمريضي في وحدات زرع الكلى. وتحديد العلاقة بين معارف الملاك التمريضي والمعلومات الديموغرافية (العمر، الجنس، المستوى التعليمي، سنوات العمل في وحدات زرع الكلى) للملاك التمريضي الذين يعملون في وحدات زرع الكلى.

المنهجية: دراسة شبه تجريبية (نموذج الاختبار القبلي والاختبار البعدي لمجموعة واحدة) أجريت الدراسة في وحدات زرع الكلى التابعة لمستشفيات بغداد التعليمية للمدة من كانون الأول ٢٠١١ ولغاية تموز ٢٠١٢، اختيرت عينة غير احتمالية (هادفة) مكونة من (١٦) ممرض وممرضة من الملاكات التمريضية العاملين في وحدات زرع الكلى في مستشفيات بغداد التعليمية وأختيرت العينة اعتمادا على معايير الدراسة ، جمعت البيانات من خلال استعمال الإستبانة المصممة والمكونة من جزئين، جزء شمل البيانات الديموغرافية الاجتماعية ويحتوي على (٩) فقرات وجزء شمل المعارف المتعلقة بزرع الكلى المكونة من (٥٨) فقرة من أسئلة الخيارات المتعدّدة موزّعة في (٨) أجزاء رئيسية. وتم تحديد ثبات أداة القياس من خلال الدراسة المصغرة وحددت مصداقية أداة القياس من خلال (٨) من الخبراء. تم تحليل البيانات من خلال تطبيق إجراءات التحليل الإحصائي الوصفي، وإجراءات التحليل الإحصائي الإستنتاجي.

النتائج: أشارت نتائج الدراسة إلى وجود اثر ايجابي لبرنامج التعليم التمريضي المستمر على معارف الملاك التمريضي المشاركين في البرنامج. حيث أظهرت أن نسبة التطور في معارف الملاك التمريضي الناتج بتأثير تطبيق برنامج التعليم التمريضي المستمر بلغ (٤٣,٣١%). كما وتشير الدراسة إلى عدم وجود علاقة بين معارف الملاك التمريضي و المعلومات الديموغرافية (العمر، الجنس، المستوى التعليمي، سنوات العمل في وحدات زرع الكلى) للملاك التمريضي العاملين في وحدات زرع الكلى.

التوصيات: أوصت الدراسة بضرورة اجراء دراسات أخرى لبرنامج التعليم التمريضي المستمر ذات العلاقة بممارسات الملاكات التمريضية في وحدات زرع الكلى. كما يوصي الباحث بضرورة تشجيع الملاك التمريضي في وحدات زرع الكلى للمشاركة في البرامج التثقيفية والدورات التدريبية حول إجراءات العناية بمريض زرع الكلى.

Abstract

Objective: The study aims to determine the effectiveness of the continuing nursing education program on nursing staffs knowledge in kidney transplantation unit and to find out the relationship between nursing staffs knowledge and demographic characteristics (age, gender, education level, and years of experiences in kidney transplantation unit).

Methodology: A quasiexperemental design (One-group Pretest - Posttest design) was carried out in kidney transplantation units at Baghdad Teaching Hospitals, from December 2011 to July 2012. A non-probability (purposive sample) of (16) nurses were selected from kidney transplant units at Baghdad teaching hospitals, the choice was based on the study criteria. The data were collected through the use of constructed questionnaire and consist from two major parts, part one consist of demographic characteristics contain (9) and part two consist of (58) items of a multiple choice questions distributed in (8) major sections. Validity of the instrument was determined through a panel of (8) experts, and reliability through a pilot study. The data were analyzed through the application of descriptive and inferential statistical analysis procedures.

Results: The findings of the present study indicate that the continuing nursing education program was effective on knowledge improvement of the participant's nurses. The total percent of the improvements resulted by the effects of applying the continuing nursing education program was (43.31%). And there was a non-significant relationship between nurse's knowledge and demographic characteristics (age, gender, education level, and years of experiences in kidney transplantation unit).

Recommendation: Based on the result of the present study the researcher recommends to carrying out additional studies on application of nursing education programs about nurses practice on kidney transplantation in kidney transplant units, and nurses should be encouraged to participate in continuing education programs and training sessions about kidney transplantation.

Keywords: Effectiveness, continuing education program, Knowledge, Kidney transplantation

Introduction:

Kidney transplant is indicated for a chronic renal failure, which can be a caused by a wide range of conditions in adults. The only alternatives in end-stage renal failure are hemodialysis or peritoneal dialysis and Kidney transplantation offers the benefits of freedom from the daily dialysis routine, removal of dietary and fluid restrictions, and an improved sense of well-being [1].

Kidney transplantation is the treatment of choice for end-stage renal disease. A successful kidney transplant improves the quality of life and reduces the mortality risk for most patients, when compared with maintenance dialysis [2].

The goal after transplant is to have return to a "new normal", free of the constraints of dialysis. Over time regain strength and energy probably have not had for a long time. The recipient may return to work or school and resume most of favorite activities [3, 7].

Education and support are probably the most important ways in which nurses can influence patients throughout the entire process of transplantation, from first entering the waiting list, through the operative period itself, to the follow-up care stage, there is a need for extensive nursing input [4, 6].

Methodology:

Study Design:

A quasiexperemental design (One-group Pretest - Posttest design) was carried out in kidney transplantation units at Baghdad Teaching Hospitals, from December 2011 to July 2012, in order to determine the effectiveness of continuing nursing education program on nursing staff's knowledge in kidney transplantation units.

Study Sample:

A non-probability (purposive sample) of (16) nurses were selected from kidney transplant units at Baghdad teaching hospitals, the choice was based on the study criteria. The data were collected through the use of constructed question-aire, which consist of (58) items of a multiple choice questions distributed in (8) sections.

Data collection:

The data were collected from (16) nurses who were working in kidney transplant unit that participated in the continuing nursing education program; they were selected after taking their oral consent and based on study criterion.

Statistical Data Analysis

1. Descriptive Data Analysis:

a. Tables (Frequencies, Percentages and Cumulative Percentages).

b. Descriptive statistics tables included (Arithmetic Mean, Standard Deviation and Standard Error).

d. Graphical presentation by using:

Bar - chart.

Pie - chart.

2. Inferential data analysis:

a. McNemar test

b. The paired-samples T- test

c. Binomial test

d. The Chi-Square test

e. Contingency coefficients

Results:

Table 1. Distribution of the studied demographical characteristics variables of nursing staff in kidney transplantation unit with comparisons significant

Demographical characteristics	Groups	No	%	Cum. Percent	C.S. P-value
Age	< 35	4	25	25	$\chi2$ =2.000 P=0.368 NS
	35 - 39	8	50	50	
	40 ≥	4	25	25	
	Total	16	100	100	
	$\bar{x} \mp S.D.$	35.75 $\mp$ 8.10			
Gender	Male	14	87.5	87.5	**Binomial P=0.004 HS**
	Female	2	12.5	12.5	
	Total	16	100	100	
Level of Education	Secondary Nursing School	1	6.2	6.2	$\chi2$ =7.625 P=0.022 NS
	Nursing Institute	10	62.5	62.5	
	Nursing College	5	31.3	31.3	
	Total	16	100	100	
Number of experie-nce in the hospital	< 5	4	25	25	$\chi2$ =2.000 P=0.368 NS
	5 - 14	8	50	50	
	15 ≥	4	25	25	
	Total	16	100	100	
	$\bar{x} \mp S.D.$	11.38 $\mp$ 7.09			
Number of Experience in the Kidney Transplant Unit	< 5	4	25	25	$\chi2$ =3.875 P=0.144 NS
	5 - 14	9	56.3	56.3	
	15 ≥	3	18.7	18.7	
	Total	16	100	100	
	$\bar{x} \mp S.D.$	10.31 $\mp$ 5.28			

HS: Highly Sig. at P<0.01; NS: Non Significant at P>0.05; S.D. = Standard deviation; C.S. = Correlation Significant, x^2 =chi-squared test, No.: Number; %=percent, P: probability level, cum= cumulative

Table (6) indicates that the majority of the nurses who participate in the study sample are within second category of age groups (35 – 39) years old and accounted for (75%) and (87.5%) were male. Concerning the level of education, the greater percentage of the nurses who participate in study sample is (62.5%) graduated from institute of nursing, the remaining (31.3%) graduated from the college of nursing and (6.2) graduated from secondary nursing school. Finally, regarding the years of nurses experience in Kidney transplant units, the results show that the majority of the nurse's participants in study sample were within the second category of experience in Kidney transplant units between (5 – 14) years of experience in Kidney transplant units and accounted for (56.3%).

Table 2. Descriptive statistics of the studied "Knowledge to the nursing staff in kidney transplantation unit" according to domains and sub domains for the two related periods (pre and post)

Domains and Sub Domains	Period	No.	Mean	Std. Deviation	Std. Error Mean
Kidney Transplant History	Pre	16	0.313	0.194	0.048
	Post	16	0.844	0.202	0.050
Donor	Pre	16	0.292	0.188	0.047
	Post	16	0.781	0.158	0.039
Recipient Preparation	Pre	16	0.580	0.205	0.051
	Post	16	0.821	0.133	0.033
Kidney Transplantation Procedure	Pre	16	0.321	0.133	0.033
	Post	16	0.643	0.128	0.032
Post Operative Nursing Care	Pre	16	0.563	0.122	0.030
	Post	16	0.894	0.105	0.026
Graft Rejection	Pre	16	0.344	0.166	0.042
	Post	16	0.729	0.181	0.045
Complications	Pre	16	0.125	0.224	0.056
	Post	16	0.719	0.256	0.064
Education related to Health	Pre	16	0.445	0.137	0.034
	Post	16	0.789	0.156	0.039
To Diet	Pre	16	0.125	0.342	0.085
	Post	16	0.875	0.342	0.085
Follow up	Pre	16	0.125	0.289	0.072
	Post	16	0.719	0.364	0.091
Medications	Pre	16	0.281	0.407	0.102
	Post	16	0.875	0.224	0.056
Health Education of the Kidney Recipient	Pre	16	0.244	0.186	0.047
	Post	16	0.815	0.129	0.032
Knowledge to the nursing staff in kidney transplantation unit	Pre	16	0.348	0.070	0.018
	Post	16	0.781	0.063	0.016

S.D. = Standard deviation; M.S. = Mean Score.

Results related to knowledge respondents regarding to kidney transplantation in kidney transplant units, were presented in table (2), indicates that the mean of score and standard deviation of the knowledge respondents in posttest of the continuing nursing education program was higher than the pretest of the continuing nursing education program in all domains and sub domains for the two related periods (pre and post) of knowledge regarding kidney transplantation in kidney transplant units. This table also indicates a significant difference between pretest and posttest of the knowledge respondents.

Table 3. Matched paired T-test for testing the differences of mean values between (pre and post) periods at the main and sub domains of the studied "knowledge to the nursing staff in kidney transplantation unit"

Paired Differences of Domains and Sub Domains	Mean	SD	Std. Error Mean	M.P.T. test	d.f	Sig. (2_tailed)	C.S. P_value
Kidney Transplant History	-0.531	0.239	0.060	-8.878	15	0.000	HS
Donor	-0.490	0.223	0.056	-8.768	15	0.000	HS
Recipient Preparation	-0.241	0.226	0.056	-4.273	15	0.001	HS
Kidney Transplantation Procedure	-0.321	0.177	0.044	-7.268	15	0.000	HS
Post Operative Nursing Care	-0.332	0.151	0.038	-8.815	15	0.000	HS
Graft Rejection	-0.385	0.249	0.062	-6.195	15	0.000	HS
Complications	-0.594	0.375	0.094	-6.333	15	0.000	HS
Education related to	-0.344	0.185	0.046	-7.416	15	0.000	HS
To Food	-0.750	0.577	0.144	-5.196	15	0.000	HS
Follow up	-0.594	0.417	0.104	-5.694	15	0.000	HS
Medications	-0.594	0.554	0.139	-4.284	15	0.001	HS
Health Education of the Recipient	-0.570	0.243	0.061	-9.398	15	0.000	HS
Information to the nursing staff in kidney transplantation unit	-0.433	0.086	0.022	-20.029	15	0.000	HS

S.D. = Standard deviation; M.S. = Mean Score; M.P.T.: Matched Paired T-Test; C.S.: Correlation Significant; d.f.= Degree of freedom, std.= standard

Table (3) indicates that the differences of mean values between (pre and post) periods at the main and sub domains of the knowledge respondents in posttest of the continuing nursing education program was higher than the pretest of the continuing nursing education program in all aspects of knowledge regarding to kidney transplantation in kidney transplant units .This table also indicates highly significant difference between pretest and posttest of the knowledge respondents at p-value (0.001).

Table 4. Association among predicted characteristics variables with an overall improvement due to program of (Knowledge to the Nursing Staff in Kidney Transplantation Unit)

Predicted Variables	C.C.	P-value	C.S.
Age Groups	0.134	0.865	NS
Gender	0.151	0.541	NS
Level of Education	0.196	0.726	NS
No. of Experience in the Hospital	0.408	0.202	NS
No. of Experience in the Kidney Transplant Unit	0.345	0.339	NS

C.C.: Correlation coefficient, C.S.: Correlation Significant; NS: Non Significant

Once again to predicting or studying the distribution's behavior of some related variables (demographical and experience of years) for the studied voluntaries, correlation ship through the contingency coefficient of the contingency tables had been constructed in table (4) which were illustrated the testing of the randomness distribution assumption among different levels of the predicted variables and the two categories of an overall responding of assessment which were reported (Low – High) cutoff point (0.40).

Figure 1. Pie chart for the changeability scoring in high light classification for overall responding towards program of (knowledge to the nursing staff in kidney transplantation unit)
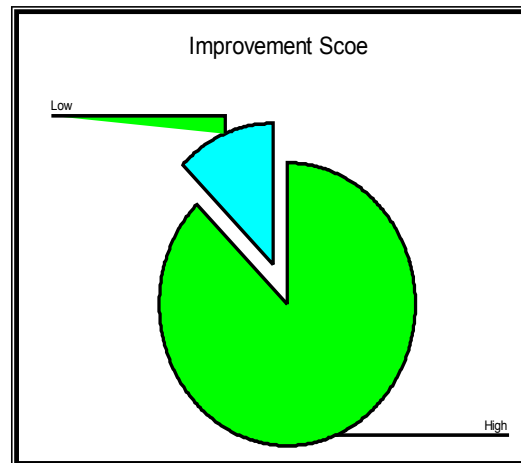
Discussion:

The continuing nursing education program was adopted to improve the nurses' knowledge toward kidney transplantation in kidney transplant units.

1. Discussion of the samples demographic characteristics.

The findings of the present study showed that the half majority of the sample were (30 – 39) years old who accounted for (50%), the age group of less than 35 years old and more than 40 years old of age accounted for 25% (Table 1).

The results of the study had shown that the majority of the samples were males (87.5%) and the remaining were females.

Concerning to the educational level of nurses, the greater percentage (62.5%) has a diploma in nursing, the remaining (31.3%) graduated from the College of Nursing and (6.2%) 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 (5 –14 years) and accounted for (56.3%), the remaining (25%) of the nurses were within ($<$ 5) years and (18.7) of the nurses were within (15 $\geq$) years of experience in kidney transplant units.

The responses of the individual patient to life with a transplant vary greatly: age, gender, employment status, stability, security and personality will all have an impact [4, 8].

2. Comparative the Differences between the Pretest and Posttest of Nurses Knowledge Respondents Regarding Overall Sections of the Continuing nursing Education Program:

The knowledge respondents in the pretest assessment of the education program indicates that there were low score findings (M.S=0.348) this means that nurses have had inadequate knowledge in concerning to kidney transplantation in kidney transplant units. The researcher shows that this insufficient knowledge because none of them attended any training session about knowledge related to kidney transplantation in kidney transplant units as selected according to the study criterion.

The improvement effect of knowledge regarding the kidney transplantation in kidney transplant units was clearly observed through the knowledge respondent in the pretest and posttest assessment. The findings reveal a positive improvement effect and high score in post knowledge test (M.S=0.781) as shown in table (2).This result reveals that the knowledge about kidney transplantation in kidney transpl-ant units was insufficient and the nurse in these units did not perform the standard methods when give the nursing care to the recipient. In conclusion, these results give an assertion that the transplant nurses are not relevant to right methods of knowledge and information in this field (The researcher).

American Society of Transplant-ation (2009) mentioned that since the first successful kidney transplantation in 1954, there has been an exponential growth in publications dealing with the care of kidney transplant recipients (KTRs). In addition, the science of conducting and interpreting both clinical trials and observational studies has become increasingly controversial and complex. Caring for KTRs requires specialized knowledge in areas as varied as immunology, pharmacology, nephr-ology, endocrinology and infectious disease [9].

3. Matched Paired T-Test for Testing the Differences of Mean Values between (pre and post) Periods at the Main and Sub Domains of the Studied "Knowledge to the Nursing Staff in Kidney Transplantation Unit"

The results indicates that the differences of mean values between (pre and post) periods at the main and Sub Domains of the knowledge respondents in posttest of the continuing nursing education program was higher than the pretest of the continuing nursing education program in all aspects of knowledge regarding to kidney transplantation in kidney transplant units as shown in table (3) and this table also indicates highly significant difference between pretest and posttest of the knowledge respondents at p-value (0.001).

Nurses have an important role in helping tailor individual immunosuppre-ssive regimens to maximize patient and kidney graft survival and to aid concordance with treatment, a key issue in managing transplant patients. Concordance management is a multi-disciplinary task but the role of the nurse is critical [1, 6].

4. Discussion of the Association among Predicted Characteristics Variables with an Overall Improvement due to Program of (Knowledge to the Nursing Staff in Kidney Transplantation Unit):

The results has reported that the distribution of the studying items of program (knowledge to the nursing staff in kidney transplantation unit) through the two dichotomous of responding had no relationship with their demo-graphical characteristics variables and as well as of their number years of experience either in the hospital or at the kidney transplant unit with an overall assessments and we can concluded that the studied program can be amend for all individuals of the studied population concerning with (Knowledge to the Nursing Staff in Kidney Transplantation Unit) whatever a differences with their (demographical and number of experience years).

This highly significant of improvement effect on knowledge respondents (Figure 1) indicates a positive effect and highly compliance with the education program, and this means that the education program was effective on improving the nurses' knowledge.

This result is supported by Shallcross, 2002 who stated that managing a successful transplant involves communication, education, as well as understanding by the patient of the treatment and its side effects. Monitoring clinical outcome requires regular follow-up of all patients by the transplant team. The focus of patient management is on long-term survival of the kidney graft and the long-term physical and mental health of the transplant recipient. The transplant nurse has a particular role in this area [1].

Recommendations:

Based on the result of the present study the researcher recommends to carrying out additional studies on application of nursing education programs about nurse's practice on kidney transplantation in kidney transplant units and nurses should be encouraged to participate in continuing education programs and training sessions about kidney transplantation.

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