

## Assessment of Learning Needs of Nursing Staff Working in Kidney Transplantation Unit at a University Hospital

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### ABSTRACT

The knowledge of healthcare workers towards kidney transplantation (KT) are fundamental in the development and sustainability of transplant programs. Healthcare workers can influence the willingness to improve their competences and nursing care of kidney transplantation recipients. The aim of this study was to assess the learning needs of nursing staff working in kidney transplantation unit at a university hospital. The research question was formulated: What are the learning needs of nursing staff working in kidney transplantation unit at a university hospital? A sample of convenience included all (sixty nurses) working in the kidney transplantation unit at New Kasser El-ainy teaching hospital which affiliated to Cairo University. Two tools were designed and utilized to collect data pertinent to the study: (a) Back ground data tool which contained sociodemographic and work related data. (b) Learning needs assessment questionnaire which include questions that assess nurse's knowledge regarding preoperative care for patient undergoing kidney transplantation. The study results revealed that the studied subjects had unsatisfactory level of knowledge about kidney transplantation (basic, preparatory care before KT., and preparatory care for discharge). On the other hand they had satisfactory level of knowledge about care during the operation of KT. and post transplantation care. Conducting an in-service training program for nurses who works at the kidney transplantation unit is recommended.

**Key words:** Learning needs assessment, kidney transplantation.

### INTRODUCTION

Chronic kidney failure (CKf) is a progressive, irreparable loss of kidney function. When renal function became too bad for continuation the activity of the patients and their daily life, CKf becomes end-stage kidney disease (ESKD) (Ignatavicius, & Workman 2010). Most chronic nephropathies are characterized by a graduated course that leads, to damage of kidney function and the requirement for renal function replacement therapy. This final stage of chronic nephropathies is termed end-stage renal disease (ESRD). The progression of (CKf) typically moves through phases

from mild, moderate, and severe reduction in glomerular function rate (GFR), to ESRD. (Arthur, etal, 2009). Chronic kidney disease (CKD) occurs when one suffers from gradual and usually permanent loss of kidney function over time. This happens gradually, usually over months to years (National Kidney Foundation 2012).

A kidney transplant is the transfer of a healthy kidney from one person (the donor) into the body of a person who has little or no kidney activity (the recipient) (NHS, National Health Service choices your health, your choices, 2012) A transplant is a treatment for kidney failure but is not a cure. A transplant potentially offers a more active

life and a longer life, free from dialysis as well as dietary restrictions (Kidney Health Australia, 2013).

The goal of transplantation is to provide the patient with a single functioning kidney to perform the work that his/her kidneys are no longer able to do. A successful transplant can return the patient to a state of good health. The kidney may be a living gift from a member of patient's family or a friend. If no living donor is available, the patient may receive a kidney from someone who has died and donated their kidney ([www.ustransplant.org](http://www.ustransplant.org), 2010). Transplantation is a progressive and innovative field of clinical practice. Care of the recipient after surgery requires that nurses be knowledgeable about the expected clinical findings and potential complications. Nursing care includes ongoing physical assessment especially evaluation of renal function (National Kidney and Urologic Diseases Information Clearinghouse 2007), and following the operation, the patient initially goes to the post anesthesia care unit (PACU) where doctors and nurses monitor him very closely. Some patients, who may need more intense observation, go to the surgical intensive care unit (SICU), although this is very unusual (Baker, Jardine, & Andrews, 2011).

Nursing care of the renal transplant recipient is focused on the recognition and prevention of complications. Ongoing assessment of renal function by determination of blood urea nitrogen (BUN), serum creatinine, fluid intake and output, weight, and serum electrolytes is routine in these clients. If indicated a renal scan or ultrasound study may be used to detect complications (Joyce, & Jane, 2005). Therefore a need assessment as a systematic approach to studying the state of knowledge, ability, interest, or attitude of a defined audience or group involving a particular subject is a prerequisite of an efficient, and

qualified nurses who will be able to provide quality nursing care to patient undergoing kidney transplantation (Paul, & McCawley, 2009).

Needs Assessment is the process of identifying and measuring areas for improvement in a target audience, and determining the methods to achieve improvement. A needs assessment is a systematic process for determining and addressing needs, or "gaps" between current conditions and desired conditions or "wants". The discrepancy between the current condition and wanted condition must be measured to appropriately identify the need. The need can be a desire to improve current performance or to correct a deficiency (Kizlik, 2010).

Before training design issues are considered, a careful needs analysis is required to develop a systematic understanding of where training is needed, what needs to be taught or trained, and who will be trained. Unless such a needs assessment has been adequately performed it may be difficult to rationally justify providing training. Such a needs assessment should enable an explanation to be given on why the training activities should be done, and also show that training is, in fact, the best solution for the performance problem or development needs ([www.amdin.org/.../SAMDI\\_TOT\\_Module](http://www.amdin.org/.../SAMDI_TOT_Module)).

Nurse educators must assess their staff needs before hands-on training. An efficient nursing instructor or preceptor has a big job. Helping a nursing staff or beginning nurse become a competent, independent practitioner requires a lot of mentoring and assistance. In order to know where to begin, where to focus and how to tailor training and support, nurse educators usually start their work with an assessment of staff needs using many of the same skills and approaches used in assessing patients (Eric, 2013).

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### **Significance of the Study**

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The significance of the study stem from the fact that learning needs assessment provides foundations for identifying deficiencies. As the body of knowledge and practice change constantly therefore, nurses have to acquire and continuously enhance their competencies by updating and expanding nursing knowledge, skills, and attitudes which should be one of the hospital policy. Through working in the kidney transplantation unit, the investigator noticed that staff nurses are not fully prepared to assume their roles as practicing nurses frequently asked to provide nursing care for patient undergoing kidney transplantation and there were many skills were not fully mastered. Identification the learning needs of nursing staff working in kidney transplantation units could be of help by giving insights to nurses for determining and addressing needs or gaps between current conditions and desired conditions (wants) to improve current performance or correct a deficiency. This improvement help nurses to consider patient's humanity and plan for more quality of care.

### **Aim of the Study**

Assessment the learning needs of nursing staff working in kidney transplantation unit at a university hospital.

### **Research Question**

What are the learning needs of nursing staff working in kidney transplantation unit at a university hospital?

### **Material and Methods**

Research Design; A descriptive exploratory design was adopted to fulfill the purpose of the study.

Subjects; A convenient sample of 60 nurses consists of all bedside nurses who

agree to participate in the study and working in the kidney transplantation unit at a university hospital.

### **Ethical consideration;**

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An official permission was granted from the faculty of nursing research ethical committee, Cairo University. The investigator emphasized that voluntary participation; confidentiality and anonymity of their responses are assured. Each nurse who agreed to participate in the study was asked to sign a written consent form. Studied group was informed that they can withdraw from the study at any time. Moreover their answers were confidential and will have no effect on their appraisal.

Setting; this study was conducted in kidney transplantation unit at New Kasser el-Ainy teaching hospital which affiliated to Cairo University.

Instrumentation; Two tools were designed and utilized to collect data pertinent to the study those are:

- 1- Back ground data tool: It consisted of demographic data and work related data. Demographic data such as (name, age, marital status, and educational level .....Etc). Work related data such as years of experience, and attendance of learning courses.
- 2- Learning needs assessment questionnaire which included questions that assess nurse's knowledge regarding pre, during, and post operative care for patients undergoing kidney transplantation.

### **Validity and Reliability of the tool;**

Panel of experts: Tool was submitted to a panel of five nursing administration and

medical surgical experts to test face and content validity.

Internal consistency reliability was performed using Cronbach's Alpha analysis. It showed that there is good internal consistency reliability 0.757.

Pilot Study; A pilot study was conducted on 10% of the study sample (6) nurses working at kidney transplantation unit in New Kasser el Ainy teaching hospital which affiliated to Cairo University. According to its results, no significant modifications were needed in any of the data collection tools, so these subjects were included in the actual study sample.

### **Procedure**

Permission to conduct the proposed study was obtained from the hospital authorities, (KT) director, and nursing director of New Kasser el-ainy teaching hospital affiliated to Cairo University. Prior to the initial interview, each (participant, volunteer) was fully informed with the purpose and nature of the study. Subjects who agreed to participate in the study asked to sign a writing consent form. Each subject was interviewed individually and asked to fulfill the background information data sheet and then fulfill the learning needs assessment questionnaire. Collection of data lasted three months starting from March to May 2014. The time required to answer the questionnaire sheet varied from one nurse to another depending on the nurse's knowledge and skills. The average time was 20 – 30 minutes. Nurse's responses were checked and calculated.

Period of study; Collection of data lasted three months starting from March to May 2014.

### **Results**

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The results obtained from this study were presented in three main sections:-

Section I: it covered the results related to background data which included:

- a. Subjects' demographic variables (table 1).
- b. Subjects' background data (table 1).

Section II: it presents data pertinent to answering the stated research question (table 2).

Section III: it presents data pertinent to some additional findings pertinent to the study (table 3-4).

Data were analyzed using Statistical Package for Social Science (SPSS windows) version 20.

As can be seen from table (1) the studied subjects consisted of 60 nurses from transplantation unit (55%) were females. Their age ranged from 20 to more than 50 years old. With a mean of  $34.366 \pm 8.562$  for all nurses. Also, the table showed, the majority of the sample (80.3%) were married. The number (83.3%) of nurses have nursing diploma, (10%) of the nurses have institute of nursing and (6.7%) of the nurses have bachelor of nursing. As regards, the entire studied sample had more than 2 years of experience with a mean  $12.666 \pm 6.032$  for all nurses. More than two third of studied sample (71.7%) were not received any in service training courses.

As can be shown from table (2) more than two third (73.3%) of the studied sample had unsatisfactory levels of basic knowledge about kidney transplantation with a mean of  $5.75 \pm 1.25$  for all nurses. Also the same table showed that (46.7%) from the studied sample have unsatisfactory level of knowledge about patient preparation for

kidney transplantation, with a mean of  $36.00 \pm 3.28$  for all nurses. And more than half of studied sample (53.3%) had unsatisfactory knowledge about patient discharge with a mean of  $10.82 \pm 2.340$  for all nurses. Also (35%) have unsatisfactory level of total knowledge about kidney transplantation with a mean of  $87.03 \pm 7.826$

Table (3) revealed that there is no significant relationship between sociodemographic variables and sample level of knowledge regarding basic knowledge of kidney transplantation. And Table (4) showed that there is a statistical significant difference was found in marital status in relation to knowledge about preparation of patients for kidney transplantation.

## Discussion

The aim of this study was to assess the learning needs of nursing staff working in kidney transplantation unit at a university hospital. To achieve the aim of the study the following research question was formulated: What are the learning needs of nursing staff working in kidney transplantation unit at a university hospital?

Findings of the current study are discussed in this chapter under the following sections: (a) interpretation of the study finding that answer the stated research question, and (b) it devoted to interpret additional findings pertinent to the study.

Learning needs of nursing staff about kidney transplantation:

Regarding the nurses' level of knowledge about kidney transplantation the finding of the present study identified that all nurses have different levels of knowledge about kidney transplantation. Kidney transplantation staff knowledge varied between unsatisfactory, average, and satisfactory level of knowledge.

As regard staff nurses total knowledge level the present study findings revealed that more than one third of the studied sample had unsatisfactory level of knowledge about kidney transplantation. From the investigator point of view, the unsatisfactory level of knowledge may be due to the majority of the studied sample was graduated from secondary nursing school and they were not attend any in-service training courses. The majority of the studied sample aged from (20-40) years old and were female and the majority of studied sample graduated from secondary nursing school. Regarding the years of experience in kidney transplantation unit of the studied sample had experience from (11-20) years and had experience from (2-10) years. As regard attending in-service training courses the majority of them were not attend any in-service training courses.

The present study findings go on the same line with Melo, et al (2015) study about " Knowledge and behavior among health professionals in relation to cadaveric organ donation and transplantation: A questionnaire-based analysis in Portuguese hospitals". Which done on sample less than two third of them were female with aged (31-40) years old; married and of the participants stated that had specific training in organ donation and transplantation, felt that they need further information. The study documented that a lack of specific knowledge and training on organ donation and transplantation issue among the study group.

This findings are supported by the American Association of Colleges of Nursing (AACN), (2015) the national voice for baccalaureate and graduate nursing programs, believes that education has a significant impact on the knowledge and competencies of the nurse clinician, as it does for all health care providers.

As regard staff nurses knowledge about basic, and discharge, more than half of the studied sample had unsatisfactory level of knowledge. From the investigator point of

view, the unsatisfactory level of knowledge may be due to the majority of the studied sample was not attend any in-service training courses about nursing management of patients undergoing kidney transplantation.

The previously mentioned study findings are consistent with Abas and Mohammed, study (2013) about "Effectiveness of continuing nursing education program on nursing staff, knowledge at kidney transplantation units in Baghdad Teaching Hospitals" which done at Iraq on purposive sample of (16) nurses. The majority of the nurses who participate in the study are between (35 – 39) years old and were male. The greater percentage of the nurses who participate in study sample is graduated from institute of nursing. Finally, regarding the years of experience in Kidney transplantation units, more than half of the studied sample was experienced between (5 – 14) years. The study result revealed that kidney transplantation nurses had unsatisfactory knowledge in concerning to nursing management of patients undergoing kidney transplantation in kidney transplant units. The researchers mentioned that this insufficient knowledge because none of them attended any in-service training program about care of patients undergoing kidney transplantation.

On the same vein McGlade, and Pierscionek, study (2013) about "can education alter attitude, behaviour and knowledge about organ donation? A pretest-post test study" which done using sample of (100) nurses from a University based in Northern Ireland. The research findings revealed that, student nurses' knowledge of organ donation can be substantially improved by education about the topic. The Knowledge about the suitability of organs that can be donated after death improved considerably.

On the other hand the present study findings are in contrarily with Alsaied,

Bener, Al-Mosalamani and Nour (2012) study finding which entitled "knowledge and attitudes of health care professionals toward organ donation and transplantation" which done in Qatar on a representative sample of 585 health care professionals (HCP) working in the hospitals. More than half of sample was female and age ranged between (30-39) years old. They had an acceptable level of knowledge about organ donation and transplantation.

Moreover the present study findings are contrary with the study finding which done by Okpere, and Anochie, (2013) about "Knowledge and Attitude of Healthcare Workers towards Kidney Transplantation in Nigeria", and Kanagavalli, (2010) study about "A study to assess the knowledge regarding organ transplantation among staff nurses in a selected hospital at Mangalore" which done in India and Demir, Selimen, Yildirim, and Kucuk (2011) study about "Knowledge and Attitudes Toward Organ/Tissue Donation and Transplantation Among Health Care Professionals Working in Organ Transplantation or Dialysis Units" which done in Istanbul. The study's results revealed that healthcare workers have good knowledge about kidney transplantation.

Recently the present study findings are contrast with Matten, et al, (2015) study finding about "nurses' knowledge, attitudes, and beliefs regarding organ and tissue donation and transplantation" which done on 1,683 nurses employed in 62 rural and urban hospitals in the Midwest. The study result revealed that the respondents were knowledgeable about organ and tissue donation and transplantation.

As regard staff nurses knowledge about intraoperative care and care after kidney transplantation, the study findings revealed that half of the studied sample and the majority of them respectively had satisfactory level of knowledge. This satisfactory level of

knowledge from the investigator point of view is due to the long period of experience of the studied sample working in post transplantation unit and they had this experience from the actual situation with patients. Whereas half of the studied sample had experience from (11-20) years in kidney transplantation unit and less than half had experience from (2-10) years in kidney transplantation unit.

The present study findings go on the same vein with the study which done by Whyte, Ward, and Eccles, (2009) about the relationship between knowledge and clinical performance in novice and experienced critical care nurses on a sample of 12 experienced nurses and 10 novice nurses. Their results indicated that experienced nurses possessed highly superior knowledge when compared with novice nurses. The results further demonstrated a lack of reliable differences in actual clinical performance. Results showed that knowledge improved over time in the practice. However, there were stark individual differences and variability in performance within the experienced group. More than half of the highly experienced and knowledgeable nurses still performed at a level that was comparable to that of a novice.

In the current study there was no statistical significant relationship existed between the selected sociodemographic variables (sex, age, years of experience, marital status, educational level, and attending training courses) and nurses' basic, perioperative, discharge, and total level of knowledge about kidney transplantation.

The similar study done by Abas and Mohammed, (2013) about "Effectiveness of continuing nursing education program on nursing staff, knowledge at kidney transplantation units in Baghdad Teaching Hospitals" on purposive sample of (16) nurses. The study result revealed that the distribution of the studying items of program (knowledge to the nursing staff in kidney

transplantation unit) had no relationship with their sociodemographic characteristics variables and as well as of their number years of experience either in the hospital or at the kidney transplant unit.

### **Conclusion**

The majority of nurses working in kidney transplantation unit had unsatisfactory level of knowledge about basic knowledge and preparing patients before kidney transplantation operation. The majority of them had no knowledge about preparing the patients for discharge after the operation of kidney transplantation. The studied sample had satisfactory level of knowledge about care during operation of kidney transplantation.

### **Recommendations**

- Nurses in kidney transplantation units need continuous monitoring for their knowledge for early detecting and solving any knowledge related problem.
- Nurses need an in-service education program to increase their knowledge regarding care of patients undergoing kidney transplantation.

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## Assessment of Learning Needs of Nursing Staff Working in Kidney Transplantation Unit at a University Hospital

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**Assessment of Learning Needs of Nursing Staff Working in Kidney Transplantation Unit at a University Hospital**

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Table (1) Frequency and percentage distribution of the studied sample in relation to selected background variables (n = 60)

Variables	NO	%
<b>Gender:</b>		
Male	27	45.0
Female	33	55.0
<b>Age in years:</b>		
20 -	24	40.0
30 -	24	40.0
40 -	9	15.0
50 and more	3	5.0
Mean $\pm$ SD	34.366 $\pm$ 8.562	
<b>Marital status:</b>		
Single	7	11.7
Marred	50	80.3
Divorced	3	5.0
<b>Educational Level:</b>		
Nursing Diploma	50	83.3
Associate Diploma	6	10.0
Bachelor of Nursing	4	6.7
<b>Experience in years:</b>		
2 to 10 years	27	45.0
11 to 20 years	30	50.0
More than 20 years	3	5.0
Mean $\pm$ SD	12.666 $\pm$ 6.032	
<b>Attending training courses:</b>		
No	43	71.7
Yes	17	28.3
<b>The persons who conduct the training courses:</b>		
Doctors	2	11.8
Nurses	5	29.4
Training Department	6	35.3
Educational and training institutions	4	6.7

Table (2) Frequency and percentage distribution of the studied sample regarding total and basic, preoperative, and discharge knowledge about kidney transplantation (n = 60)

Information	NO	%
Basic Information:		
Unsatisfactory	44	73.3
Average	15	25.0
Satisfactory	1	1.7
Mean ± SD	5.75 ± 1.25	
Preparatory Information:		
Unsatisfactory	28	46.7
Average	20	33.3
Satisfactory	12	20.0
Mean ± SD	36.00 ± 3.28	
Information during care:		
Unsatisfactory	12	20.0
Average	18	30.0
Satisfactory	30	50.0
Mean ± SD	3.30 ± .788	
Information after care:		
Unsatisfactory	4	6.7
Average	9	15.0
Satisfactory	47	78.3
Mean ± SD	31.17 ± 3.637	
Information about discharge:		
Unsatisfactory	32	53.3
Average	25	41.7
Satisfactory	3	5.0
Mean ± SD	10.82 ± 2.340	
Total information score:		
Unsatisfactory	21	35
Average	34	56.7
Satisfactory	5	8.3
Mean ± SD	87.03 ± 7.826	

**Assessment of Learning Needs of Nursing Staff Working in Kidney Transplantation Unit at a University Hospital**

Table (3): Chi square and frequency distribution of studied sample socio-demographic variables as regards basic knowledge of kidney transplantation (n = 60)

variables	Basic knowledge						$\chi^2$	P
	Unsatisfactory		Average		Satisfactory			
Sex:	NO	%	NO	%	NO	%	1.102	.576
Male	21	35	6	10	0	0.0		
Female	23	38.3	9	15	1	1.7		
<b>Age:</b>								
20 -	17	28.3	6	10	1	1.7	5.557	.475
30 -	20	33.3	4	6.7	0	0.0		
40 -	6	10	3	5	0	0.0		
50 and more	1	1.7	2	3.3	0	0.0		
<b>Experience:</b>								
< 10	20	33.3	6	10	1	1.7	4.124	.389
10 - 20	23	38.3	7	11.7	0	0.0		
More than 20	1	1.7	2	3.3	0	0.0		
<b>Marital status:</b>								
Single	6	10	1	1.7	0	0.0	3.429	.489
Married	37	61.7	12	20	1	1.7		
Divorced	1	1.7	2	3.3	0	0.0		
<b>Educational Level:</b>								
Nursing Diploma	34	56.7	15	25	1	1.7	4.364	.359
Associate Diploma	6	10	0	0.0	0	0.0		
Bachelor of Nursing	4	6.7	0	0.0	0	0.0		
<b>Attending training Courses:</b>								
No	31	51.7	11	18.3	1	1.7	.448	.799
Yes	13	21.7	4	6.7	0	0.0		

Table (4): Chi square and frequency distribution of studied sample socio-demographic variables in relation to knowledge about Preoperative care for kidney transplantation (n = 60)

Variables	Preparatory knowledge						$\chi^2$	P
	Unsatisfactory		Average		Satisfactory			
Sex:	NO	%	NO	%	NO	%	3.810	.149
Male	16	26.7	8	13.3	3	5		
Female	12	20	12	20	9	15		
Age:								
20 -	13	21.7	7	11.7	4	6.7	4.222	.647
30 -	10	16.7	7	11.7	7	11.7		
40 -	4	6.7	4	6.7	1	1.7		
50 and more	1	1.7	2	3.3	0	0.0		
Experience:								
< 10	14	23.3	9	15	4	6.7	3.071	.546
10 – 20	13	21.7	9	15	8	13.3		
More than 20	1	1.7	2	3.3	0	0.0		
Marital Status:							10.952	.027 *
Single	6	10	1	1.7	0	0.0		
Married	22	36.7	16	26.7	12	20		
Divorced	0	0.0	3	5	0	0.0		
Educational Level:								
Nursing Diploma	22	36.7	19	31.7	9	15	4.693	.320
Associate Diploma	4	6.7	1	1.7	1	1.7		
Bachelor of Nursing	2	3.3	0	0.0	2	3.3		
Attending training Courses:								
No	20	33.3	14	23.3	9	15	.094	.954
Yes	8	13.3	6	10	3	5		

\* Only one statistical significant relationship existed between subjects' marital status and their level of knowledge about preoperative care of patients undergoing kidney transplantation.