Impact of Self Learning Package on the Patient's Performance Undergoing Kidney Transplantation

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ABSTRACT

Background*:** Kidney transplantation is the best method of treatment for improvement of renal functions in patients with end-stage renal failure. The main aims of patient education following renal transplantation are to help patients acquire the required skills for daily living without problem and to help patients cope with physiological and psychosocial problems**.** ***The aim of this study was to evaluate the impact of self-learning package on the patient's performance undergoing kidney transplantation at Urology and Nephrology Center at Mansoura University. ***Subjects & Methods:*** the study was carried out in nephrology unit and outpatient's clinics at Urology and Nephrology Center of Mansoura University. ***Research design:*** was a quasi-experimental design was utilized, included (50) adult patients undergoing kidney transplantation from both genders. Four tools in this study was used, Patient's assessment questionnaire consists of four parts: sociodemographic data, patients' knowledge assessment sheet, observational checklist to assess patients' practices, and assessment sheet to assess the appearance of problems and complications. ***Results*:** the study results concluded that there was a statistical significant difference was observed in total knowledge and practices through the study periods after implementation of self-learning package. ***Conclusion:*** patients had lack of knowledge and practices regarding kidney transplantation, so the self- learning package, which was applied, has remarkable improvement on patients' knowledge and practices. ***Recommendations*:** Replication of the study on a larger probability sample selected from different geographical areas in Egypt is recommended to obtain more generalized data. Periodic health teaching programme for patients undergoing kidney transplantation and their families in outpatients' clinics with simplified printed guidelines through pamphlets , brochures or booklets, and should be held to update the knowledge and practices needed for those patients.

Keywords: Kidney transplantation, self- learning package, patient's performance

INTRODUCTION

Renal failure is the most common medical problem in Egypt. The number of patients is increasing; in Egypt 2013 were 300 per million in population and every patient's costs above 22,500 pound to have total cost of 700 million pounds annually in Egypt. The rate of renal transplantation in Egypt is 32 per 1000 dialysis patients per year. First dialysis for acute renal failure in Egypt: 1958, Ain Shams University. First dialysis for chronic renal failure in Egypt: 1963, Cairo University. First transplantation in Egypt: 1976, Urology and Nephrology Center at Mansoura University ***(World Health Organization, 2014)***.

End Stage Renal Disease (ESRD) or Chronic Kidney Disease (CKD Stage5) is the end result of a progressive worsening of renal function over a period of months or years. It affects the physical and psycho- social functioning of the individuals as it needs. All individuals who reach this stage need renal replacement therapy such as hemodialysis, peritoneal dialysis and renal transplantation as a substitute for the function of their original kidneys. Different Renal Replacement Therapies (RRT) has different levels of impact on physical, psychological and social health. Quality of Life (QOL) as perceived by patients with end stage renal disease is an important measure of patient outcome ***(Sreejitha, et al., 2012)***.

For all patients with ESRD who are medically fit, renal transplant is the best treatment option, as it helps the patient to re-establish a normal life. The major goal of transplantation is to achieve a good quality of life and to reduce the effects of disease related complications. The success of kidney transplantation depends on a long list of variables, which include the characteristics of the donor and recipient, the skillfulness of the surgeons, the type of immunosuppressive and supportive therapy, as well as prompt and adequate treatments for possible complications, such as cardiovascular disease, malignancy, and infection ***(Ponticelli and Graziani, 2012).***

A self-learning module is a document containing all necessary knowledge for a student to attain one or more educational objectives independently of the teacher. Using these modules, the student can take over a large part of his/her training, while the teacher remains available only when needed. It could be offered in a form of work books, study guides, work stations, video tapes, internet modules, and computer programs ***(Santrock, 2009).***

Additionally, consistency with principles of adult education which enable learners to meet their own learning needs, provide immediate feedback and reinforcement of learning, promote independence, actively involve learners, flexibility in relation to the number of learners who can be provided with instruction at one time, are other considering other advantages of self-learning package ***(Ewan and White, 2007).***

Patients who need solid organ transplantation suffer from a chronic condition, which by itself entails risks and health problems so, preparation is key and specialist nurses have a pivotal role in leading and providing education and support for patients throughout transplant process. Thus, patients who are capable of understanding the transplantation can also change their living experience. They need to learn how to deal with new drugs, take them for the rest of their lives, besides adhering to lifestyle changes, including hygiene practices, infection prevention, monitoring of the new organ's functioning, body image changes, adaptation to mood and energy level swings, professional issues among others ***(Mcpake, 2008).***

Nurses are one of the health team members who spend most time with the patient, giving them an essential role as educators in the different learning needs diseases demand. Teaching the patient with kidney transplantation and family about long term measures to promote health is crucial for the success of transplantation and is an important role of the nurse ***(Smeltzer and Bare, 2010).***

AIM OF STUDY:

This study aims to evaluate the impact of self-learning package on patient's performance undergoing kidney transplantation through:

- Assessing the patient's performance undergoing kidney transplantation in the nephrology units and outpatient's clinics in Urology and Nephrology center at Mansoura University.
- Developing self-learning package for patients undergoing kidney transplantation based on their needs.
- Implementing self-learning package for patients undergoing kidney transplantation based on their needs.
- Evaluating the impact of self-learning package on the improvement of patients' performance undergoing kidney transplantation.

Hypotheses

- Implementing self-learning package will improve the patients' knowledge undergoing kidney transplantation.
- Implementing self-learning package will have a positive effect on patients' practices undergoing kidney transplantation.

SUBJECT AND METHODS:

This study was portrayed under four main designs as following:

I. Technical design.
II. Operational design.
III. Administrative design.
IV. Statistical design.

I. Technical design:

The technical design includes; the research design, setting of the study, subjects, and data collection tools.

Research design:

A quasi experimental design (pre and post-test) was utilized in this study to measure the impact of self-learning package on performance of patients undergoing kidney transplantation.

Setting:

The current study was conducted in the nephrology units and outpatient's clinics of Urology and Nephrology Center at Mansoura University.

Subjects:

Purposive sample of (50) adult patients were recruited for the conduction of this study regardless to their gender, residence, occupation, or level of education.

They were selected according to the number of patients undergoing kidney transplantation within (2014-2015) in study setting according to the statistical department which affiliated to setting.

Subjects were recruited for the study with the following *inclusion criteria,* adult patients (male & female), during 6 months period from starting the self-learning package, and ability to participate in the self-learning package. *The exclusion criteria* were patients who are unable to communicate and patient's with peripheral neuropathy or accelerated atherosclerosis.

Tools for Data Collection:

Four tools used by the researcher to collect data including:

Patient's Assessment Interview Questionnaire, which was developed and used by the researcher, to collect necessary data about patients in this study, comprised of four parts:

Part 1: Sociodemographic characteristics of the patients: as age, gender, marital status, educational level, residence, occupation, monthly income, family members, room's number, and smoking habit. It composed of (14) closed ended questions.

Medical history of the patients:

It was developed by the researcher based on reviewing of literature ***(Long, et al., 2010 & Loma Linda University Medical, 2012)*** to assess:

a) Past medical history

It included a series of questions to elicit patient's knowledge, related to past medical history; it was composed of (3) questions, which included causes of renal failure, type and duration of dialysis.

b) Present medical history

It was used to collect data about present medical history; it was composed of (3) questions, which included suffering from chronic diseases, kind of donor and relative degree.

c) Family medical history

It was used to collect data about family medical history; it was composed of (4) questions, which included family member suffering from renal failure, relative degree.

Part 2: Patients' knowledge assessment tool:

It was constructed and reviewed by utilizing the most recent and relevant literatures related to ***(Long, et al., 2010 & Loma Linda University Medical, 2012)***, which included a series of questions to elicit patient's knowledge about kidney transplantation, it was composed of (65) questions, which included function of kidney, kidney transplantation, nutrition, exercises, daily activities, rest and sleep methods, follow-up, medications, infection control measures, sexual relation, and protection against cancer.

Scoring system:

The answers were evaluated using model key answer prepared by the researcher; the score one for correct answers and zero was given when the answers were unknown or incorrect**.** The total knowledge score was (188) for male and (200) for female. The general patients' knowledge was classified into two groups: as the following:-

- ***Satisfactory if score ≥ 60% of the maximum score.***
- ***Unsatisfactory if score < 60% of the maximum score.***

Part 3: Observational checklist to assess patients' practices:

The tool developed by the researcher to assess patients' practices based on ***(Long, et al., 2010)***. The observational checklist consist of 50 steps categories under 3 main heading that identifies the practice for patients as the following:

- Stretching exercises, which composed of (15) steps.
- Strengthening exercises, which composed of (25) steps.
- Breast self-examination, which composed of (10) steps.

Scoring system:

The score one was given when the step was done correctly and zero was given when the step was not done or incorrect. The total practice score was (40) for male and (50) for female. The general patients' practice was classified into two groups: as the following:-

- ***Adequately done if score ≥ 70% of the maximum score.***
- ***Inadequately done if score < 70% of the maximum score.***

Part 4: Assess the appearance of Problems and Complications after Kidney Transplantation

It was developed by researcher and reviewed by utilizing the most recent and relevant literatures based on ***(Long, et al., & Frohn, et al., 2010),*** which included appearance of problems and complications after kidney transplantation.

Self-learning package for patients undergoing kidney transplantation:

It was developed and written in Arabic language by researcher after reviewing relevant literature. The self-learning package was consisted of different elements; function of kidney, kidney transplantation, nutrition, exercises, daily activities, rest and sleep methods, follow-up, medications, infection control measures, sexual relation, protection against cancer, psychological condition, problems and complication after kidney transplantation.

II- Operational Design:

The operational design includes preparatory phase, validity and reliability, pilot study, and field work.

Preparatory phase:

It includes reviewing of the current and relevant related literature and theoretical knowledge of the various related aspects using books, articles, and exploring web sites and periodical magazines in order to develop the tools for data collection.

Face & Content Validity:

Validity of tools was done by a group of experts to check the relevancy, clarity, comprehensiveness, and applicability of the questions. According to their opinions, minor modifications were done and the final form was developed.

Tools of data collection were tested to face validity of content, by seven professions and experts from Medical Surgical Nursing staff at Faculty of Nursing (Mansoura University and Port Said University) and medical staff of Internal Medicine and Nephrology, Faculty of Medicine, at Mansoura University. Experts were from different academic categories (professors and assistant professor). Their opinions were elicited regarding the tool format, clarity, comprehensiveness, layout, consistency, and scoring system.

Reliability of the tool:

One of the most popular reliability statistics in use today is Cronbach's Alpha **(Cronbach's, 1951)**. Cronbach’s Alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability.

Ethical considerations:

The purpose of the study was explained to the patients and oral consent was obtained

from them to participate in this study. They were given an opportunity to withdraw from the study without given a reason and they were assured that anonymity and confidentiality of information was protected. Ethics, values, culture, and beliefs were respected.

Pilot study:

A pilot study was carried out on 10% of the study sample (5) patients undergoing kidney transplantation in order to test the clarity and applicability of the study tools. Required modifications were done in the form of adding or omission of some questions. The time needed to fill in the questionnaire was about (45-50 minutes). Patients involved in the pilot study were excluded from the main study subjects.

Field Work:

Data were collected in the following sequence:

The study protocol was approved and an official permission to carry out the study was obtained from pertinent authorities after explanation of its purpose.

Structured interview was conducted individually for patients eligible for the study (fulfilled the inclusion and exclusion criteria) in order to explain the purpose of the study, assure confidentiality and to obtain informed written consent.

Data collection extended over a period of 6 months from end of December (2014) until end of June (2015), the self-learning package was designed based on analysis of actual educational patients' needs assessment in pretest by using the pre constructed tools.

The actual field work was started from end of December (2014) until end of June (2015); the data were collected by using four tools as the following:

Tool I: Demographic data and heath history sheet.

Tool II: Assessment of patient's knowledge.

Tool III: Observational checklist to assess patients' practices.

Tool IV: Assessment the appearance of problems and complications after kidney transplantation.

Data were collected by the researcher over three days per week (Sunday, Monday and Wednesday) during the morning shift by rotation at the nephrology units and out patient's clinics of Urology and Nephrology Center at Mansoura University.

Methods Used:

Self-learning package was used through (Lecture, posters, pictures and group discussion methods).

The study consists of seven interviews:

- **Pre-intervention phase:**
  - **The 1st interview** included interviewing the patients to collect data regarding demographic characteristics, past, present and family history (time allowed: from 10 – 20 minutes for each patient).
  - **The 2nd interview** included assessment of patients' knowledge about kidney transplantation and practice for the patients undergoing kidney transplantation (time allowed: from 30 – 45 minutes).

- **Intervention phase:**
  - **From 3th to 6th interview (self-learning package)**

  Orientation for self-learning package contents was done, using simple Arabic language to suit patients' level of understanding as well as their accompanying relatives during interview. Each of interviews was started by a summary about what has been discussed in the previous interview and the objectives of the new interview, also, the interview ended by a summary of its contents and feedback from the patients was obtained to ensure that he/ she got the maximum benefit, and correct any misunderstanding. This self-learning package consisted of four interviews: each interview lasted about 45 minutes and was accompanied by feedbacks.

  The researcher remains available for any explanation. Patients were also informed to be in contact with the researcher by telephone for any guidance.

- **Post- intervention phase:**
  - **The 7th interview (post-test and follow-up)** included reassess patients after implementation of self-learning package to identify progress in term of differences in their level of response from baseline; it was done one months (post- test) after kidney transplantation for knowledge and practice and after 3 months (follow-up) after the implementation of self-care learning package for knowledge and practice , appearance of problems and complications by using the same tools used in the pretest period.
  - Follow up and assessing patients help to detect transient changes, increase patients adaptation and compliance to self-learning package.

III- Administrative design:

An official permission was obtained from the manager of Urology and Nephrology Center at Mansoura University. A letter was issued to them from Dean of the Faculty of Nursing, Port Said University explaining the aim of the study to obtain the permission for data collection.

IV- Statistical analysis

All data coded, entered, and analyzed by using SPSS, (Statistical Package for Social Sciences), soft-ware program version 16, which was applied to frequency tables, statistical significance and associations were assessed using student t-test, and F-test for equality of means and coefficient relation to detect the relations between the

variables, mean, range, and standard deviation were also used. Also Cronbach's alpha test was used to test the reliability of the tool. The observed differences and associations were considered significant at $p \leq 0.05$.

RESULTS:

Table (1): showed that the mean age of the studied subjects was **31.13± 8.55** as **20%** were in the age group of **18 - <20** years old, **66%** were in the age group of **20 - <40** years, and **14%** were in the age group of **40- 60** years old. Males were more prevalent than females; they constituted **80%** of the studied subjects. Regarding the marital status, the sample percent **60%** of the studied subjects were married, and **40%** were single. **40%** of the studied subjects were living in rural areas. Regarding to occupation, the sample percent **40%** of the studied subjects were not working. Concerning to income**, 56%** were had not enough income as reported by patients. It was also observed that **88%** of the studied subjects were having children in the group of **1- < 4** children**.** It was observed that **70%** were non-smokers, while **30%** were previously smoker.

Figure (1): showed that 70% of the studied subjects had secondary education, 20% had universal education, and 10% were read and write.

Table (2): showed that, **28%** of the studied subjects suffered from hypertension as the main cause of developing renal failure followed by **24%** atrophy of kidney, and **20%** inflammation of kidney. It was observed **96%** of the studied subjects performed hemodialysis before transplantation and about **41.7%** of them in the dialysis duration from 1- 2years.Regarding to chronic diseases, it can be seen clearly that **30%** of the studied subjects having chronic diseases. According to the relative degree with the donor **90%** from the studied subjects were on the first relative degree with the donor, and **10%** were foreign.

Table (3): demonstrated that **4.0%** from the first degree of family members affected with renal failure.

Table (4): demonstrates higher total and subtotal post mean knowledge scores regarding knowledge about kidney, kidney transplantation, nutrition, exercises, rest and sleep, follow up, urinary elimination, medications, infection control measures and protection against complications, personal hygiene, and sexual relation through the study periods as compared to their pre- implementation score, with a significant statistical difference at the following **P value (≤0.05)**.

Table (5): shows that, all of the study subjects **100%** were having unsatisfactory level of knowledge before implementation of Self - Learning Package, while **36.0%** were having satisfactory level of knowledge post implementation of Self - Learning Package, and **94.0%** were having satisfactory level of knowledge at the follow-up after implementation of Self - Learning Package.

Table (6): demonstrates higher total and subtotal post mean practice scores regarding exercises, and breast self-examination, throughout the study periods among the study subjects as compared to their pre- implementation score, with a significant statistical difference at P values **(≤ 0.05)** in all items of practice **,** except in breast self-examination through follow-up period compared with post implementation period and total score through pre- implementation there was highly significant statistical difference at P value **(≤0.001).**

Table (7): shows that, **98.0%** of the study subjects were having inadequately level of practices score before implementation of Self - Learning Package, while **60.0%** were having adequately level of practices post implementation of Self - Learning Package, and **98.0%** were having adequately level of practices at the follow-up after implementation of Self - Learning Package.

Table (8): this table revealed that **70.0%** of the studied subjects suffered from insomnia, **40.0%** suffered from frequent diarrhea and **32.0%** suffered from stomach pain as problems after kidney transplantation.

Table (9): revealed that, the development of complications in between the study subjects during 3 months, which represented only **2.0%** of the study subjects, developed diabetes mellitus.

Table (10): revealed that, there was significant statistical relation between improvement of knowledge and Sociodemographic characteristics of studied subjects post implementation of self- learning package at P Value **≤0.05.**

Table (11): revealed that, there was no significant statistical relation between studied subjects' Practices improvement and their Sociodemographic characteristics post implementation of self- learning package**.**

Table (1): Distribution of the Studied Subjects According to their Socio-demographic Characteristics (n = 50):

Items	No. =50	**%**
Age (in years)		
18- <20	10	20.0
20- <40	33	66.0
40- 60	7	14.0
Mean±SD = 31.13± 8.55		
Gender		
Male	40	80.0
Female	10	20.0
Marital status		
Single	20	40.0
Married	30	60.0
Residence		
Urban	30	60.0
Rural	20	40.0
Occupation		
governmental	8	16.0
private	12	24.0
Hand work	10	20.0
Not working	20	40.0
Income(according to patients)		
Enough	22	44.0
Not enough	28	56.0
Number of family members		
Nothing	4	8.0
1-< 4	44	88.0
4-< 7	2	4.0
Smoking		
No	35	70.0
Previous	15	30.0

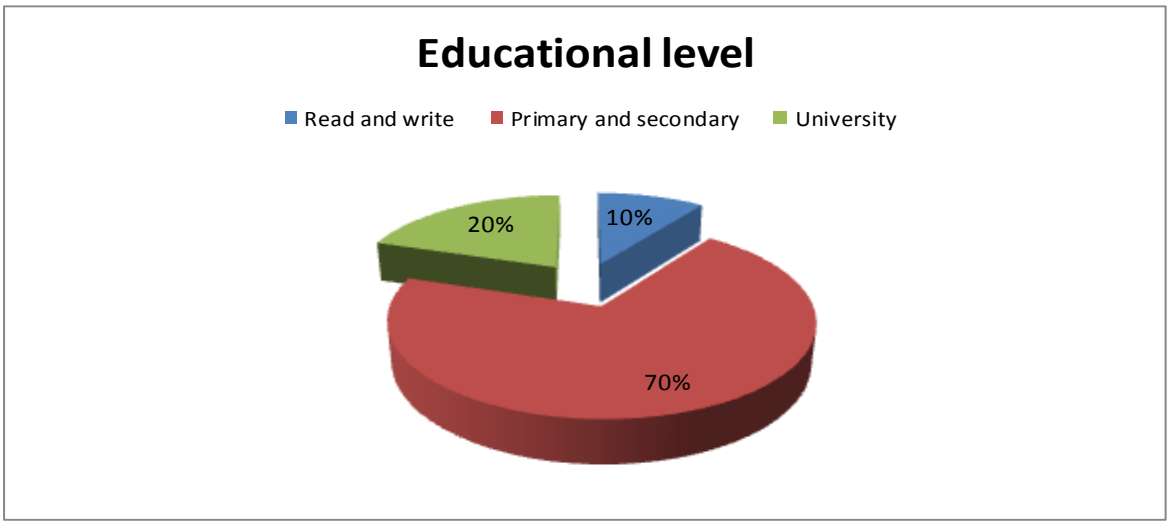

Figure (1): Distribution of the Studied Subjects According to their Educational Level (n= 50).

Table (2): Distribution of the Studied Subjects According to their Past and Present Health History (n=50).

Past and Present Health History	No.	%
Causes of renal failure		
- Inflammation of kidney	10	20.0
- Polycystic kidney	8	16.0
- Atrophy of kidney	12	24.0
- Diabetes Mellitus	1	2.0
- Hypertension	14	28.0
- Painkillers	2	4.0
- Systemic Lupus Erythematosus	3	6.0
Dialysis before transplantation		
- yes	48	96.0
- No	2	4.0
Duration of dialysis		
- 1m-5m	7	14.6
- 6m-11m	5	10.4
- 1y-2y	20	41.7
- 3y-4y	10	20.8
- 5y-6y	5	10.4
- >6y	1	2.1
Type of dialysis		
- Non	2	4.0
- Hemodialysis	48	96.0
Chronic diseases		
- Yes	15	30.0
- No	35	70.0
Donor kind		
- Foreign	5	10.0
- Relative	45	90.0
Relation degree		
- Non	5	10.0
- First	45	90.0

Table (3): Distribution of the Studied Subjects According to their Family Health History (n=50)

Items	Yes		No	
	no	%	No	%
- Family member affected with R.F	2	4.0	48	96.0
- Perform kidney transplantation	0	0.0	2	4.0
- Relation degree of affected member • Non • First	48 2	96.0 4.0	2 48	4.0 96.0

***R.F: Renal Failure**

Table (4): Difference among mean knowledge scores of the Studied Subjects According to Total and Subtotal Mean Knowledge Scores throughout the Study Periods (n= 50):

Assessment period Items	**Pre (SLM)** **Mean±SD**	**Post (SLM)** **Mean±SD**	**Follow up** **Mean±SD**
Knowledge about kidney and kidney transplantation	1.80±0.81	3.83±1.23	4.67±1.12
Knowledge about nutrition	8.07±5.13	31.60±4.74	40.20±3.84
Knowledge about exercises	1.33±1.63	8.90±2.20	11.83±1.58
Knowledge about rest and sleep	1.13±0.43	3.57±1.10	4.50±0.68
Knowledge about follow up	2.17±1.82	11.13± 2.96	14.80± 2.91
Knowledge about urinary elimination	0.90±1.06	5.33±1.37	7.30±1.18
Knowledge about medications	2.17±1.82	11.13± 2.96	14.80± 2.91
Knowledge about infection control measures and protection against complications	4.27± 2.30	10.03± 2.46	12.53± 1.96
Knowledge about personal hygiene	0.37± 0.85	3.77± 1.41	5.67± 1.03
Knowledge about sexual relation	1.00±0.87	3.17± 0.87	4.27±0.69
Total (200)	13.97±6.98	52.47±10.86	69.20±7.82

Table (5): Total Knowledge Score Levels among Study Subjects Before, Post and Follow Up Implementation of SLM (n= 50):

Score Levels **Assessment Period**	**Unsatisfactory < 60%**		**Satisfactory ≥60%**		**X2**	**P-value**
	N	%	N	%		
Before implementation	50	100	-	-	-	-
Post implementation (SLM)	32	64.0	18	36.0	6.383	0.013 *
Follow up	3	6.0	47	94.0	5.263	0.028 *

- (*) statistically significant≤0.05

Table (6): Total and Subtotal Mean Practice Scores Before, Post and Follow Up Implementation of SLM (n= 50):

Assessment period **Items**	**Pre (SLM)** **Mean±SD**	**Post (SLM)** **Mean±SD**	**Follow up** **Mean±SD**	**P- values** **(P1&P2)**
Exercises:				
Stretching exercises	2.13±1.85	8.67±1.32	10.20±0.96	**<0.05***
Strengthening exercises	2.37±2.55	12.23±2.67	15.17±2.25	**<0.05***
Breast self-examination(n=10)	1.00±1.15	4.50± 0.58	5.50± 0.58	**p1=0.001**** p2 > 0.05
Total (50)	8.07±5.13	31.60±4.74	40.20±3.84	p1 > 0.05 **p2 < 0.05***

- (**) Highly statistically significant≤0.001 **- (*) statistically significant≤0.05**

- p1; Pre (SLM) with Follow Up **- p2; Post (SLM) with Follow Up**

Table (7): Total Practices Score Levels among Study Subjects Before, Post and Follow Up Implementation of SLM (n= 50):

Score Levels **Assessment Period**	**Inadequately < 70%**		**Adequately ≥ 70 %**		**X2**	**P-value**
	N	**%**	**N**	**%**		
Before implementation	49	98.0	1	2.0	66,667	0.000**
Post implementation (SLM)	20	40.0	30	60.0	25.03	0.001**
Follow up	1	2.0	49	98.0	47.01	0.001**

- (**) Highly statistically significant≤0.001

Table (8): Distribution of the Studied Subjects According to the Presence of Problems after Kidney Transplantation (3 Months from application of Self - Learning Package) n= (50):

Items	No.	%
Problems after transplantation*		
- Loss of appetite	2	4.0
- Dry mouth	4	8.0
- Mouse ulcer	10	20.0
- Stomach pain	16	**32.0**
- Frequent diarrhea	20	**40.0**
	5	10.0
- Itchy skin	15	30.0
- Pain in bones	35	**70.0**
- Insomnia		

***** Answers were not mutually exclusive".

Table (9): Distribution of the Studied Subjects According to the Presence of Complications after Kidney Transplantation (3 Months from application of Self - Learning Package) n= (50):

Complications	Yes	
	no	%
- Rejection	0	0.0
- Diabetes mellitus	1	**2.0**
- Hypertension	0	0.0
- Stroke	0	0.0
- Atherosclerosis	0	0.0
- Hepatitis	0	0.0
- Pneumonia	0	0.0
- Cancer	0	0.0

Table (10): Relation between studied subjects' Knowledge and their Socio-Demographic Data Post Implementation of Self Learning Package: (n=50)

Sociodemographic Data	No.	Knowledge Improvement		Chi-square	P-value
		No	%		
Age group:					
18- <20	10	5	50.0		
20- <40	33	25	75.7	11.109	**0.011***
40- 60	7	3	42.8		
Gender:					
Male	40	31	77.5	1.834	0.176
Female	10	7	70.0		
Marital status:					
Single	20	13	65.0	2.066	0.559
Married	30	24	80.0		
Educational level:					
Read and write.	5	2	40.0		
Primary and secondary.	35	27	77.1	0.104	0.991
University.	10	6	11.4		
Occupation					
governmental	8	6	75.0		
private	12	5	41.7	8.842	0.065
Hand work	10	6	60.0		
Not working	20	11			
Nature of work :					
High physical effort	15	10	66.7		
Moderate Physical effort	10	6	60.0	2.7	0.428
Light physical effort.	5	3	60.0		
Residence:					
Urban.	30	19	63.33	0.001	0.981
Rural.	20	11	55.0		
Income:					
Enough	22	16	72.7	2.3	0.34
Not enough	28	19	67.85		

- (*) *statistically significant*≤0.05 - (**) *Highly statistically significant*≤0.001

Table (11): Relation between studied subjects' Practices and their Socio-Demographic Data Post Implementation of Self Learning Package: (n=50)

Sociodemographic Data	No.	Practices Improvement		Chi-square	P-value
		No	%		
Age group:					
18- <20	10	8	80.0		
20- <40	33	25	75.7	0.237	0.971
40- 60	7	5	71.4		
Gender:					
Male	40	32	80.0	1.204	0.273
Female	10	7	70.0		
Marital status:					
Single	20	14	70.0	1.359	0.715
Married	30	22	73.3		
Educational level:					
Read and write.	5	3	60.0		
Primary and secondary.	35	25	71.4	2.77	0.428
University.	10	8	80.0		
Occupation					
governmental	8	5	50.0		
private	12	7	58.3	1.283	0.864
Hand work	10	5	50.0		
Not working	20	10	50.0		
Nature of work :					
High physical effort	15	10	66.7		
Moderate Physical effort	10	6	60.0	4.7	0.1
Light physical effort.	5	3	60.0		
Residence:					
Urban.	30	24	80.0	0.020	0.888
Rural.	20	14	70.0		
Income:					
Enough	22	18	81.8	1.5	0.601
Not enough	28	20	71.4		

- (*) *statistically significant*≤0.05 **- *(**) Highly statistically significant*≤0.001**

DISCUSSION:

Kidney transplantation is a surgical procedure in which a kidney is removed from one person {donor} and pleased into the body of a person suffering from renal failure {recipient} ***(Raja, 2009)***. On the other hand kidney transplantation is recommended for person who has serious kidney dysfunction, and will not be able to live without dialysis or transplant ***(American Association of Kidney Patients, 2011)***.

Findings of the current study revealed that, more than half of the studied subjects were aged between 20 to 40 years old. This might be due to that it is suitable age for transplant with less complication than older age. This finding is consistent with ***Bakr and Ghoneim (2005),*** reported that their sample age ranged from 21 – 30 years. This finding is inconsistent with ***Lennerling and Forsberg (2012),*** who found that their studied sample ranged in age from 30- 59 years, these differences might due to the cause of renal failure in Egypt differ from that of western countries. As regard to gender, the results of the current study showed that, the majority studied subjects were males. This finding is supported by **Stolzmann**, ***et al. (2007),*** mentioned that male also had a significantly higher rate of transplantation than females. This result also in accordance with ***Ramadan (2013),*** who reported that more than three quarters of the subjects were male.

In relation to marital status, the results showed that more than half of the subjects were married. This finding due to same age groups of the studied sample. This finding is consistent with the finding of ***Khattak, et al. (2010),*** reported that the majority of their studied subjects were married. The results of this study revealed that more than half were living in urban than rural areas. This finding could be due to small sample size. This finding is contrary with ***El-Sadany (2007),*** who reported that the majority of her subjects were from rural area.

Concerning to educational level of the studied subjects, the results of this study illustrated that less than three quadrants of studied subjects were secondary level. This finding is contrary with ***Rumyantzev, et al. (2006);*** they found that the majority of their subjects had high degree of educational level. The results of this study revealed that more than half of the subjects had not enough monthly income as reported by patients. This finding may be due to the most of subject were didn't work. In this respect, ***Veerappan, et al. (2011),*** reported that the majority of their subjects had variable and not enough monthly. For smoking**,** the current study clarifying that the most of studied subjects were non smoker. This due to the patients' awareness about the effects of smoking on their health before and after transplantation. This is contrary with ***Banas, et al. (2008),*** reported that the majority of the studied subjects were smoker.

The current study illustrated that, more than one quadrant of the studied subjects suffered from hypertension. The finding is supported by ***National Kidney Foundation (2012),*** reported that the high blood pressure is the most common cause of renal

failure. While ***Kaufman and Batuman (2012),*** reported that the most common cause of renal failure was chronic glomerulonephritis. Also, the finding of the current study illustrated that the most of the studied subjects performed hemodialysis before transplantation. The same finding was reported by ***Ramadan (2013),*** who mentioned that the majority of her subjects were performing hemodialysis.

Transplants are most successful when the kidney comes from a living relative donor. The results showed that, the majority of subjects were first degree related donor. This could be due to coherent relations between members of the family. This is in agreement with ***Koçak, et al. (2004),*** reported that the majority of their study was first degree related donor. This also on the same line with ***Ahmed (2013),*** who reported that, the majority of subjects were first degree related donor.

Finding of the current study revealed that, there was a statistical significant difference was observed in total knowledge score through the study periods after implementation of self-learning package at ($p \leq 0.05$). This could be attributable to appropriate preoperative counseling regarding function of the kidney, kidney transplantation, nutrition, exercises, rest and sleep, follow up, urinary elimination, medications, infection control measures and protection against complications, personal hygiene, and sexual relation leading to better postoperative and cognitive adjustment to changes in life style postoperatively. This finding is in agreement with ***Mersal and Aly (2014),*** reported that there was significant difference in pre-and post-health education program.

In view of the foregoing, it was quite expected to find very low levels of knowledge among the study subjects in the present study before implementation of self-learning package. It was found that the all of them had unsatisfactory knowledge regarding kidney transplantation. This was noticed in all tested areas of knowledge. This lack of knowledge would have a negative impact on QoL for these patients. Additionally, it might lead to complications among the patients. The finding is in congruence with ***Mohammed (2013),*** who mentioned that more than have of the patient had unsatisfactory and no available knowledge regarding kidney transplantation. This result in the same line with ***Gordon, et al. (2010),*** reported that most of kidney transplanted patients' knowledge was below the satisfactory level and need a lot of information, so they recommended that the transplant centers need to take greater efforts to consistently provide appropriate education to improve patients' knowledge and help the patients' awareness about their needs.

The significant improvements demonstrated post implementation of self-learning package when it found that most of the patients had satisfactory level of knowledge at the follow-up after implementation of Self - Learning Package, which indicates that these patients were in real need for such information. Moreover, the acquired knowledge was retained with no declines throughout the study period. Our findings are in agreement with ***Urstad (2013),*** who stated that the highest knowledge scores

were found and patient education intervention was increased renal recipients'knowledge significantly.

Regarding patients' level of practice before and after implementation of self-learning package, the present study revealed that there was statistical significant difference was observed in total practices score regarding exercises through the study periods after implementation of self-learning package at ($p \leq 0.05$), except in breast self-examination there was highly significant statistical difference at P value (≤ 0.001). These results in the same line with ***Schafer-Keller (2009)*** and ***Ponticelli, and Graziani (2012),*** who stated that the majority of their study was having inadequately level of practices score before kidney transplantation.

There were significant improvements demonstrated at the follow –up phase when it found that the most of study subjects were having adequately level of practices after implementation of Self - Learning Package. Like knowledge, the adequate practice continued throughout the follow-up, and the attendance of the program was the only independent predictor that positively influenced the practice score. In agreement with our findings, ***Mersal and Aly (2014),*** reported that the patients had better practice and positive coping post the education program. ***Heiwe and Jacobson (2011),*** reported that the habitual physical activity after renal transplantation was positively associated with quality of life and aerobic fitness, and negatively associated with body fat. Regular exercise and physical activity may help reduce the high prevalence of cardiovascular risk factors, improve quality of life and reduce the side effects of immunosuppression.

Regarding to presence of problems the current study revealed that more than half of the studied subjects suffered from insomnia, this could be due to need to urinate. These results in the same line with ***Burkhalter, et al., (2013),*** reported that their findings show high prevalences and incidences of insomnias, with negative impacts on daytime functionality. This finding is contrary with ***Maes, et al., (2006),*** reported that the majority of their study suffered from frequent diarrhea. The risk for CKD is influenced by many factors some of which have a direct impact on patients are treated in pre-, peri, and post transplantation. Regarding to presence of complications the current study revealed that the minority of the study subjects, developed diabetes mellitus. This finding could be due to the side effects of immunosuppression drugs. This finding is in agreement with ***Jiménez, et al., (2009),*** who reported that the minority of his study had hypertension and diabetes after transplantation. Also, in the same line with ***Ramadan (2013),*** the minority of the studied subjects had CKD (hypertension and diabetes).

Regarding to patients' knowledge improvement, there was significant statistical relation between improvement of knowledge and Sociodemographic characteristics of studied subjects post implementation of self- learning package at P Value (≤ 0.05). Our findings in agreement with ***Mersal and Aly (2014),*** reported that there was significant statistical difference between improvement of knowledge and

Sociodemographic characteristics of patients post the educational program. ***Curcani and Tan (2011),*** reported that there was significant statistical difference between improvement of knowledge and Sociodemographic characteristics of kidney transplanted patients and added that the patients who had undergone transplantation, patient education is a significant process inducing quality of life of patient and giving him responsibility for self-care, after and before transplantation.

Finding of the current study revealed that, there was no significant statistical relation between studied subjects' Practices improvement and their Sociodemographic characteristics post implementation of self- learning package. This finding is contrary with ***Soltannezhad, Farsi and Moroei (2013),*** reported that there was significant statistical difference between studied subjects' Practices improvement and their Sociodemographic characteristics and found that empowerment programs that focus on increasing awareness, knowledge, skills, motivation, self-esteem and the creation of self-efficacy in self-control and preventive behaviors will lead to increases in self-self-efficacy and quality of life. Finally, ***Mersal and Aly (2014),*** reported that the patients had better knowledge and positive coping by using problem focused coping strategies post intervention. Patients' education program was enhancing patients' knowledge, self-efficacy, and coping strategies.

CONCLUSION:

Based on study findings, it can be concluded that: there were significant improvements demonstrated post implementation of self-learning package when it found that most of the patients had satisfactory level of knowledge at the follow-up after implementation of Self - Learning Package. There were significant improvements demonstrated at the follow –up phase when it found that the most of study subjects were having adequately level of practices after implementation of Self - Learning Package.

RECOMMENDATIONS:

Periodic health teaching programme for patients undergoing kidney transplantation and their families in outpatients' clinics with simplified printed guidelines through leaflets, brochures or booklets, and should be held to update the knowledge and practices needed for patients. Continuous education should be provided by the healthcare team for patients. An education training team or education nurse should be trained to work in the transplantation outpatient. Also it was be recommended that periodic refreshment trainings for patients and their family about rejection signs and symptoms, infection prevention, immunosuppressive therapy, how to cope with life style modification.

REFERENCES:

Ahmed, N. (2013): Adherence of Patients after Kidney Transplantation toward Therapeutic Regimen. Published Master's Thesis, in Medical Surgical Nursing, Ain Shams University, Faculty of Nursing, Pp 96- 100.

***American Association of Kidney Patients. (2011*)**: Chronic Kidney Disease Information. Available in http://www.aak. org/my. Access on 7/10/2015.

Bakr, M. A., & Ghoneim, M.A. (2005): Living Donor Renal Transplantation. 1976-2003 the Mansoura Experience. Saudi J Kidney Transplant; 16(4): 573-583.

Banas, M., Wolf, J., Hoffmann, U., Krüger, B., Böger, C., Orth, S., & Kramer, B. (2008): Smoking Behavior of Patients before and after Renal Transplantation. Vol; 23(4), Pp 1442-1446.

Burkhalter, H., Brunner, D., Wirz-Justice, A., Cajochen, C., Weaver, T., Steiger, G., Fehr, T., Venzin' R., & Geest, S.(2013): Self-reported Sleep Disturbances in Renal Transplant Recipients. BMC Nephrology, 14:220. Available at: http://www.biomedcentral.com/1471-2369/14/220. Access on 7/10/2015.

Cronbach, J. (1951): Coefficient Alpha and Internal Structure of Tests. Psychometrics, Pp: 297-334.

Curcani, M., & Tan M. (2011): Effect of the Education Given to the Patients Undergone Kidney Transplantation on the Life Quality and Compliance to Treatment and Anxiety and Depression Levels. Health MED; (5) 4, 753-758.

El-Sadany, S. (2007): Compliance to the Recommended Life Style Behavior after Transplantation. Published Master's Thesis, in Medical Surgical Nursing, Alexandria University, Faculty of nursing.

Ewan, F., & White, D. (2007): Educational Hand Book for Health Personnel. (2nd ed.,). World Health Organization. Geneva, Pp 229- 247.

Frohn, C., Fricke, L., Puchta, J., & Kirchner, H. (2010): The Effect of HLA-C Matching on Acute Renal Transplant Rejection. Journal Nephrology Dial Transplant. Vol; 16, Pp: 355 – 360.

Gordon, A., Caicedo, J., Ladner, D., Reddy, E., & Abecassis, M. (2010): Issue Transplant Center Provision of Education and Culturally and Linguistically Competent care. American Journal of Transplantation. Vol; 10(12), Pp: 2701–2707.

Heiwe, S., & Jacobson H. (2011): Exercise training for Adults with Chronic Kidney Disease. Cochrane Database Syst Rev;10:CD003236.

Jiménez S., , Marcén, R., Teruel, L., Fernández, A., Pascual J., Galeano, C., Villacorta, J., Burgos, J., & Ortuño, J. (2009): Management of Chronic Kidney Disease after Renal Transplantation: Is It Different from Non Transplant Patients?, Vol; 41(6), Pp: 2409 -2411.

Kaufman, D., & Batuman, V. (2012): Assessment and Management of the Renal Transplant Patient. Available at: http://emedicine.medscape.com/article/429314-overview. Access on 1/6/2015.

Khattak, M., Sandhu, G., Woodward, R., Stoff, J., & Goldfarb-Rumyantzev, A. (2010): Association of Marital Status with Access to Renal Transplantation. Vol; 10(12), Pp 2624 -2631.

Koçak, T., Nane, I., Ander, H., Ziylan, O., Oktar, T., & Ozsoy, C. (2004): Related Donor Kidney Transplantations. Vol; 72(3), Pp: 252-256.

Lennerling, A., & Forsberg, A. (2012): Self- Reported Non-Adherence and Beliefs about Medication in a Swedish Kidney Transplant Population. The Open Nursing Journal; 6:41-46.

Loma Linda University Medical center. (2012): Post Kidney Transplant; Preventing Problems after Transplantation. Available at: http//lomalindahealth.org/medical-center/index. Page. Access on 5/7/2015.

Long, D., Park, B., Vellani, S., Vellani, S., McGhee, W., James, M., & Stein, M., (2010): Transplant Handbook: A Guide for Your Health Care after Kidney Transplantation. Available at: http://www.itns.org/pdfs2009/ITNS_Kidney_Booklet_Eng.pdf Kidney. Access on 7/7/2015.

Maes, B., Hadaya, K., Moor, B., Cambier, P., Peeters, P., Meester, J., Donck, J., Sennesael, J., & Squifflet, P. (2006): Severe Diarrhea in Renal Transplant Patients. American Journal of Transplantation. Vol; 6(1), Pp: 1466–1472.

Mcpake, D. (2008): Caring for Patients after Kidney Transplantation. Nursing Standard. 23(19): 49-57.

Mersal, F., & Aly, R. (2014): Effect of Patient Education on Coping, Quality of Life, Knowledge and Self-Efficacy of Kidney Recipient Patients. Vol; 3(2), Pp: 78-86.

Mohammed, S. (2013): Evaluation of Quality of Life in Renal Transplant Recipient. Published Master's Thesis, in Medical Surgical Nursing, Port-Said University, Faculty of nursing.

National Kidney Foundation. (2012): Clinical Practice Guide Lines for Kidney Transplantation. Available at http://www.kidney.org/kidney Transplantation. Access on 2/4/2015.

Ponticelli, C., & Graziani, G. (2012): Education and Counseling of Renal Transplant Recipients. Department of Internal Medicine, Division of Nephrology. JNEPHROL; 25(06): 879-889.

Raja, D. (2009): Kidney Transplant, Kidney Failure, Kidney Transplantation. Urology and Andrology Center. Available at: http://dilipraja.com/kidney-transplant.htm. Access on 7/10/2015.

Ramadan, S. (2013): Assessment of Renal Recipient's Needs. Unpublished Master's Thesis, in Medical Surgical Nursing, Benha University, Faculty of nursing.

Rumyantzev, G., Korford, J., Baird, B., Chelamcharla, M., Habib, A., Wand, B., Lin, S., & Shihab, F. (2006)*:* Role of Socioeconomic Status in Kidney Transplant Outcome. Vol; 1(2), Pp 313-322.

Santrock, M. (2009): Identifying Successes Characteristics of Self-Learning. Available at URL**:** http://www.utk.edu.dlf/sdlr. Access on 7/10/2015.

Schafer-Keller, B. (2009): Patient Self-management in Kidney Transplantation. Doctoral Thesis in Medical Sciences – Nursing program at the Institute of Nursing Science (INS) of the University of Basel.

Smeltzer, S.C., & Bare, B.G. (2010)*:* Brunner & Sauddarth's Text Book of Medical – Surgical Nursing. (12th ed.). Philadelphia: Lippincott Co., Pp: 326-1321.

Sreejitha N.S., Devi K.S., Deepa, M., Narayana, G.L., Anil, M., & Rajesh R. (2012): The quality of life of patients on maintenance hemodialysis and those who underwent renal transplantation. Amrita J Med.; 8:1–44.

Soltannezhad, F., Farsi, Z., & Moroei, M. (2013): The Effect of Educating Health Promotion Strategies on Self-Care Self-Efficacy in Patients Undergoing Kidney Transplantation: A Double Blind Randomized Trial. J. Nurs Midwifery Stud. 2(2): 64-70. DOI: 10.5812/nms.11874.

Stolzmann, K., Bautista, L., Gangnon, R., McElroy, J., Becker, B., & Remington, P. (2007): Trends in Kidney Transplantation Rates and Disparities. Vol; 99(8), Pp 923-932.

Urstad K. H. (2013): Patient Education for Renal Transplant Recipients. Doctoral Thesis Faculty of Medicine. University of Oslo, Norway.

Veerappan, I., Neelakantan, N., Tamilarasi, V., & John, G. (2011)*:* Medical and Non-Medical Factors that Affect Voluntary Living-Related Kidney Donation: A Single-Center Study, Indian J Nephrology. Vol; 1(2), Pp 313-322.

***World Health Organization. (2014*)**:** Renal Transplantation. Available at http://www.who.int/bulletin/volumes/86/3/07-041715/en/. Access on 21/5/2015.

تأثير حزمة التعليم الذاتى على أداء المرضي الخاضعين لعملية زرع الكلى

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الخلاصة

الدراسة الحالية دراسة شبه تجريبية هدفها تقييم تأثير حزمة التعليم الذاتي على أداء المرضى الخاضعين لعملية زرع الكلى، وقد أجريت هذه الدراسة في أقسام الكلى والعيادات الخارجية بمركز الكلى والمسالك البولية جامعة المنصورة. وشملت عينة البحث (50) مريضا من المرضى البالغين من كلا الجنسين و الخاضعين لعملية زرع الكلى. وتم استخدام أربع أدوات لجمع البيانات: استمارة استبيان تحتوى علي بيانات المريض، التقييم المعرفي للمرضى الخاضعين لعملية زرع الكلى، تقييم ممارسات المرضى، استمارة تقييم المشاكل والمضاعفات للمرضى. وقد أسفرت نتائج البحث أن هناك فروق ذات دلالة إحصائية في التقييم المعرفي، والممارسات لهؤلاء المرضى خلال فترات الدراسة بعد تنفيذ حزمة التعلم الذاتي. وأن المرضى ليس لديهم المعلومات والممارسات الكافية المتعلقة بزرع الكلى، وبالتالي فإن حزمة التعلم الذاتي التي تم تطبيقها أظهرت تحسنا ملحوظا في معلومات وممارسات المرضى. بناءا علي نتائج الدراسة أوصي بتكرار هذه الدراسة على عينة أكبر بمناطق جغرافية مختلفة في مصر للحصول على بيانات أكثر عمومية. وأيضاً عمل برنامج تثقيف صحي دوري للمرضى الخاضعين لعملية زرع الكلى وأسرهم في العيادات الخارجية مع تبسيط التوجيهات المطبوعة من خلال المنشورات والكتيبات لتحديث المعلومات والممارسات اللازمة للمرضى.

الكلمات المرشدة: زرع الكلى، حزمة التعليم الذاتي، أداء، المرضي .