Impact of Preoperative Teaching Program among Patients undergoing Kidney Surgery on their both Pain Management outcome and Patient Satisfaction.

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Abstract

The aim of the present study is to evaluate the impact of preoperative teaching program on pain outcome & satisfaction for patients undergoing kidney surgery. **Research design** Quasi-experimental study design was be utilized. **Sample** data were collected from 60 patients undergoing kidney surgery at urology department El-minia university hospital. **Research hypothesis** mean scores of all aspect of pain management outcome questionnaire in study group would be better than that in control group. **Tools utilized for data collection** were patient assessment sheets, Teaching Program and Modified American Pain society patient Outcome Questionnaire (APS-POQ- 1995). **The results** regarding post-op. pain management outcome questionnaire there was statistical significance difference related to pain severity & pain relief as *P*-value=0.01, 0.00001** ,related to interference with function (activities in bed & out of bed – falling asleep & staying sleep) as *P*-value = 0.05*, 0.001** 0.020*, 0.001** ,There was statistical difference for Perception of care between study & control groups. **Conclusion** a highly significant difference in the study group regarding to all aspect of pain management outcome and length of hospital stay compared to the control group and there was positive correlation of using more than two methods of non-pharmacological pain management strategies with post-op. analgesic consumption. **Recommendations** further research studies are needed to focus on preoperative teaching programs of post-op pain management for patients undergoing surgery.

Key words: Kidney surgery, Teaching program, Modified American Pain society patient Outcome Questionnaire & Satisfaction.

Introduction

Pain often occurs in hospitalized patients and is one of the most clinically challenging problems for nurses, pain and discomfort in these patients can be due to surgical, post-traumatic wounds, and routine nursing procedures such as IV cannulation and dressing changes**. (Moffatt et al., 2008).**

Pain is common, and expected, after surgery. Recent data suggest that 80 % of patients experience pain postoperatively; any operation involving a body cavity like kidney surgery should be regarded as painful. Post- kidney surgical pain is a complex response to tissue trauma during surgery that stimulates hypersensitivity of the central nervous system, **(Apfelbaum et al., 2009)**

The pain experience is complex; involving physical, emotional and cognitive components .Pain is subjective and highly individualized, only patients knows whether pain is present and what the experience is like, it interferes with personal relationships and influencing the meaning of life. **(Patricia& Griffin., (2009).**

Primary care providers have an opportunity to educate patients on alternative methods and treatments available to treat acute pain effectively. The integration of these strategies are particularly important during preoperative clearance or consultation. Patients have been shown to have improved satisfaction with pain management when provided with education preoperatively **(Sauaia et aI., 2005).**

Pain among patients, undergoing moderate to major surgery, should be relieved by both pharmacological and non-pharmacological interventions, non-pharmacological intervention appears needed as an adjunctive treatment to facilitate pain relief, manage anxiety, achieve a balance between opioid administered and related side effects, and decrease the amount of required pre-anesthetic medication and anesthesia**.(Koch et al.,2008)**

High-quality pain management is defined as having several features, these include appropriate ongoing assessment (eg, screening for the presence of pain, completion of a comprehensive initial assessment when pain is present, and frequent reassessments of patient responses to treatment); interdisciplinary, collaborative care planning that includes patient input; appropriate treatment that is efficacious, cost-conscious, culturally and developmentally

appropriate, and safe; and access to specialty care as needed**.(Gordon et al., 2005).**

Preoperative teaching provides the surgical patient with pertinent information concerning the surgical process, Preoperative teaching is an integral part of nursing practice; the benefits of preoperative teaching have been consistently documented in nursing and medical research literature. **(Smith, 2008)**

Patient education is a major concern for perioperative nurses in a surgery setting. , research has shown that preoperative education can improve patient outcomes and satisfaction with the surgical experience Many studies present the positive effects of preoperative teaching on post-operative outcomes, such as a reduction in anxiety level, recovery time, postoperative complications and use of analgesia and an increase in patient satisfaction and compliance with treatment regimes. **(Hayat, 2009)**

The educational needs of patients are dependent on the patients' own ability to identify the severity of their pain, and their level of understanding about pain management options **(Kastanias et al., 2009).**

Appropriate preoperative teaching for surgical patients has therefore become more important and necessary with the shift of caring responsibility from health-care professionals. **(Dougherty, 2008)**

Aim of the study

The aim of this study is to evaluate impact of preoperative teaching program on pain outcome & satisfaction for patient undergoing kidney surgery.

Significance of the Study

More than 80% of patients undergoing surgical procedures complain of moderate-to-severe pain postoperatively, adverse effects of unrelieved pain including pain severity, interference with function (activities) ,affective experience (emotional) , side effects(safety) and perception of care (satisfaction).Providing preoperative knowledge about operation and specific non-pharmacological pain management strategies can decrease post-operative pain and it encourages a patient's positive attitude, so this study will be carried out to assess impact of preoperative teaching program on pain outcome & satisfaction for patient undergoing kidney surgery at urology department El-minia university hospital

Research hypotheses

1. Mean scores of all aspect of pain management outcome questionnaire in study group would be better than that in control group.
2. Post-operative hospital stay duration of study group would be less than that in control group**.**
3. Mean score of post –operative analgesics consumption in study group would be fewer than that in control group.

Subjects and Methods

Research design

Quasi-experimental study design was utilized to fulfill the aim of this study

Study variables

The independent variable in this study was the teaching program while the dependent variables were patient's knowledge and practice.

Technical design

Setting

The study was conducted at urological department EL-minia university hospital in the period from (July 2011) until (Feb. 2012).

Subjects:

A convenience sample of sixty (60) adult patients who agreed to participate in the study were included in the study, (42) males & (18) females, with the mean age & SD were (45.62 ± 10.804) .They were equally divided into two groups study & control groups (study group who received teaching program while control group who received routine hospital care , (21) of the study group were males and (9) of them were females, the same number was in control group) who were admitted for kidney surgery at urology department El-minia university

Patients were selected according to the following criteria; patients who were hospitalized for at least 72 hours immediate postoperative provided that they were Conscious & oriented to person, time &place, and able to communicate.

Exclusive criteria: Patients undergoing emergency operations, Post-operative state of confusion, psychological or intellectual disability, chronic diseases as diabetes and speech disorder.

Tools for data collection: data pertinent to the study were collected and utilized by three tools as the following

Tool I: Patient assessment sheet: this tool was developed by the researcher to assess patients' needs and their knowledge about pain. Content validity of the tool was tested by expertise in medical & nursing field. This tool is divided into three parts to cover the following dimensions: sociodemographic data, medical &surgical data and structured interview questionnaire sheet. These data were collected and the data collection sheet was filled by the researcher through an interview; by taking a history from patients and assess of patient's knowledge about pain. This tool included questions in the form of multiple choices.

Part one: socio- demographic data: This part was developed to assess the patients profile as patient's name, gender, age, occupation, educational level and marital status.

Part two: Medical and surgical data: This part was developed to collect data regarding date of admission, special habits such as smoker, alcoholic, drug addict, surgical diagnosis, operation name, date of operation, date of discharge.

Part three: structured Interview questionnaire sheet, to assess patient's knowledge about pain & its management: It used to assess patient's knowledge about kidney, pain and its management.

Scoring system:

As regarded structured interview questionnaire sheet which assess patient's knowledge that included 54 items each item was observed, categorized and scored into incomplete answer =1 or complete answer = 2. Those who obtained less than 60 % were considered having unsatisfactory knowledge level and who obtained equal or more than 60 % were considered having satisfactory knowledge level.

Tool II: Teaching Program: This tool was used to enhance patient's knowledge and practice about pain; it included the following parts:

Part one: Knowledge about kidney and its surgery

Part two: Knowledge about pain

Part three: Teaching about pain management strategies that included:

A-Pharmacological strategies which are used in urology department are nonsteroidal anti-inflammatory drugs (NSAIDS) (indications, side effects)

B- Non pharmacological strategies as (Distraction, meditation, imagery, cold& heat packs, massage, relaxation, music therapy, prayer, walking)

Tool III: **Modified American Pain society patient Outcome Questionnaire (APS-POQ- 1995):** Is a part of quality assurance (QA) standards for the treatment of acute pain to assist health care organizations to explore patient experiences and outcomes; it was used to assess the outcomes of pain management. With particular attention to patient satisfaction with pain management, the first American **(**APS-POQ) was published in 1991, and then in 1995, the (APS QA) standards were revised and published with an updated. In 2011 researcher and expertise applied some modifications on (APS-POQ), this modifications was that pain management outcome were assessed every 3hrs from immediate post-operative day to the first two postoperative days. It included these aspects:-

Pain severity by using numerical pain rating scale **interference with function (activities**) Doing activities, in bed as turning ,sitting up , repositioning, Doing activities out of bed as walking , sitting in chair , standing at the sink, Falling asleep and staying a sleep, **affective experience (emotional**): as Anxious, Depressed, Frightened and Helpless **side effects (safety)**: as nausea, drowsiness, itching, and dizziness , **perception of care (satisfaction)** it included the following questions: a) If the patient allowed to participate in decisions about pain treatment as much as he / she wanted to? , If the patient satisfied with the results of pain treatment while in hospital? Did the patient receive any information about pain treatment options, if yes the patient shown how this information helpful, and **non pharmacological pain management strategies** it included the following questions: Did the patient use any non –medicine methods to relieve pain? If yes; the patient mentioned what he / she used from nonpharmacological methods. How often did a nurse or doctor encourage him /her to use non medicine methods?

Scoring system

	Non	Mild	Moderate	Severe
Score	**0**	**1-3**	**4-6**	**7-10**

Total Scoring system for (APS-POQ- 1995)

	Unsatisfactory level of practice	Satisfactory level of practice.
Score	**60%**	**≥60%**

- **The reliability** of this tool was estimated using Cronbach's alpha coefficients
- **The construct validity** was evaluated using principal-axis factor analysis with oblimin rotation.

Operational Design: The operational design included preparatory phase and field work phase.

I. Preparatory phase:

- **The study tools** were designed after reviewing of literature and different studies related to the problem and the theoretical knowledge of various aspects of (the impact of preoperative teaching program on pain outcome & satisfaction for patient undergoing kidney surgery) using books, articles, periodicals magazines and internet in order to design tool of data collection.
- **The content validity**: was done by expertise opinion in the urology department, medical and surgical nursing field.
- **Pilot study**: was carried out in June-2011 on 10% (6) patients from both sexes who were chosen before embarking on the data collection based on identified criteria to evaluate the clarity and applicability of the study tools. A pilot study was conducted one month before collection of data to

detect any particular problem in the statements clarity, feasibility, and applicability of the tool .The data obtained from the pilot study were analyzed. no change was done in the assessment sheet ,so the (6) patients selected for the pilot study were included in the main study.

II. Field work phase

Before conducting the actual study, an official permission was obtained and the purpose of the study was explained to all patients and their consent were obtained. The researcher emphasized that participation in the study was voluntary and assured patients that no risk to discomfort was anticipated during the interview and during assessment and their care was not affected in any way whether they agreed to participate or not. The purpose of the study was simply explained to patients who agreed to participate in the study. The study group received teaching program.

Preoperatively

The patient stayed in the urology department till he/ she was transferred to operating room, the 1st patient's interview was to explain purpose and nature of the study as well as patient agreement for voluntary participation , the researcher introduced herself to initiate line communication with patient, and filled tool one (patient assessment sheets with its three parts);For study group the five sessions of teaching program were carried out through two days preoperatively.

Teaching program sessions

The teaching program had been implemented for the study group in term of sessions during two days preoperatively; there were a total five sessions were conducted for each patient, each session ranged between (20-40) minutes. Each session usually started by a summary of what had been taught during the previous session & the objectives of the new session. After each session there was 10 minutes for discussion & gave feedback, the researcher encouraged patient to perform nonpharmacological pain management strategies actually .Feedback and reinforcement of teaching was performed according to the patients' needs to ensure their understanding. Each patient in the study group obtained a copy of the teaching program booklet.

1. The first session: included orientation; introduce myself to patient carrying out pre- test of knowledge questionnaire sheet and establishing a good relationship with patient.
2. The second session: provided knowledge about anatomy of urinary system & knowledge about kidney surgery.
3. The third session: provided knowledge about pain (Definition, types, factors affecting pain, signs& symptoms of pain and complications of unrelieved pain). And knowledge about pain assessment tool and teach the patient how to use
4. The fourth session: included information about pharmacological pain management methods
5. The fifth session: included information and teaching skills about non- pharmacological pain management methods as (Distraction, meditation, imagery, cold& heat packs, massage, relaxation, music therapy, prayer, walking).

-For control group the patients just received routine hospital care.

Postoperatively*:* At the first three post-op. days (1st 24hrs, 2nd 24hrs & 3rd 24hrs)

The researcher used tool three for both study &control groups to assess the following:

Post-operative analgesic consumption, vital signs every 3hrs.and Modified American Pain society patient Outcome Questionnaire every 3hrs which included these aspects: Pain severity & pain relief, Interface with function (activities) ,Affective experience (emotional), Side effects (safety), Perception of care (satisfactions) and use of non phramacological strategies.

Administrative design

An official permission was obtained from the head of the urology department to conduct the study. Patient's agreement for voluntary participation was obtained and the purpose and nature of the study was explained.

Ethical approval: Permission to conduct this study was obtained by the nursing agency and ethical comities of the hospital. The researcher explained to eligible patients about the research, patients were advised of their right to withdraw from the study at any point, and that their participation status wouldn't affect the care they received. Patient's names had been coded for data entry so that their names hadn't been identified, and data was assured confidentiality and anonymity.

Statistical design

The collected data were coded then transformed in to specially designed form to be suitable for entering in to IBM compatible computer, All entered data were verified for any errors using Statistical Packing for Social Sciences (SPSS) version (17) for windows .the following tests for significance were used frequency ,percentage , means and standard deviation ,correlation coefficient and multivariate regression analysis. Using of t-test for comparison of means and determine significant for numeric variables. A probability level of 0.05 was adopted as a level of significance for testing the research hypothesis .statistical significance was considered at p-value < 0.05, p >0.05 not significant and p < 0.001 highly significant.

Results

Table (1): Comparison between study and control groups in relation to post Op. pain severity &relief (n=60)

Pain	Groups		X^2	*P*-value
	Study group (n=30)	Control group (n=30)		
	Mean ± SD	Mean ± SD		
Pain severity				
• 1st 24hrs	7.147 ±3.345	9.92± 1.19	18.455	0.05*
• 2nd 24hrs	5.567±1.427	6.75± 1.55	19.286	0.04*
• 3rd 24 hrs	4.056± 1.261	6.04± 2.11	25.686	0.01**
Pain relief				
• 1st24hrs	7.820± 1.099	8.58± 1.40	22.491	0.04*
• 2nd24hrs	5.339± 1.386	7.47± 2.23	23.121	0.01**
• 3rd24hrs	3.789± 1.187	5.62± 2.08	21.293	0.03*

significant at P≤0.05* * Highly statistical significant at P≤0.01*

Table (2): Comparison between study and control group regarding to how much post op. pain interfered with patient activities. (n=60).

Post-op. activities	Study group (n=30)	Control group (n=30)	X^2	*P*-value
	Mean ± SD	Mean ± SD		
Activities in bed				
• 1st 24hrs	7.340± 0.793	9.020± 3.222	28.952	0.004**
• 2nd 24hrs	5.078± 1.415	6.094± 1.694	18.068	0.05*
• 3rd 24 hrs	3.244± 1.153	5.202± 2.076	20.472	0.009**
Activities out of bed				
• 1st 24hrs	7.820± 1.099	8.580± 1.401	22.491	0.04*
• 2nd 24hrs	5.339± 1.386	7.467± 2.231	23.121	0.01*
• 3rd 24 hrs	3.789± 1.187	5.616± 2.077	21.293	0.03*
Falling asleep				
• 1st 24hrs	8.313± 1.331	7.513± 1.616	27.948	0.006**
• 2nd 24hrs	5.933± 1.548	6.328± 1.913	14.074	0.01**
• 3rd 24 hrs	4.855± 2.063	5.789± 2.305	20.286	0.05*
Staying asleep				
• 1st 24hrs	7.973± 1.802	7.660± 1.849	24.863	0.01**
• 2nd 24hrs	5.333± 1.753	6.361± 1.939	18.381	0.03*
• 3rd 24 hrs	4.911± 1.722	6.056± 1.873	15.425	0.03*

NS = Not significant **significant at P≤0.05* *** Highly statistical significant at P≤0.01*

Table (3): Comparison between study and control group in relation to affective experience (emotional) (n=60)

Affective experience (emotional)	Study (n=30)	Control(n=30)	X^2	*P*-value
	Mean ± SD	Mean ± SD		
Anxious				
• 1st 24hrs	2.67± 3.16	4.02± 3.47	6.57	0.475NS
• 2nd 24hrs	2.19± 2.45	3.93± 3.38	14.03	0.05*
▪ 3rd 24 hrs	1.80± 2.29	3.51± 2.89	13.59	0.05*
Depressed				
• 1st 24hrs	1.20± 2.04	1.83± 2.19	4.041	0.257NS
• 2nd 24hrs	0.667±1.728	1.13± 1.79	10.332	0.01*
▪ 3rd 24 hrs	0.667± 1.729	0.467± 1.25	8.800	0.05*
Frightened				
• 1st 24hrs	3.636± 3.528	4.067± 3.11	11.391	0.077NS
• 2nd 24hrs	2.278± 2.781	2.989± 2.92	9.624	0.087NS
▪ 3rd 24 hrs	2.289± 2.537	3.050± 2.75	9.800	0.133NS
Helpless				
• 1st 24hrs	3.87± 2.66	4.07± 2.69	14.762	0.064NS
• 2nd 24hrs	2.70± 2.45	3.31± 2.87	14.000	0.233NS
• 3rd 24 hrs	2.17± 2.57	3.18± 2.89	17.000	0.01*

NS = Not significant **significant at P≤0.05* *** Highly statistical significant at P≤0.01*

Table (4): Comparison between study and control group related to post op. side effects (n=60)

Side effects (safety)	Study group (n=30)	Control group (n=30)	X^2	*P*-value
	Mean ± SD	Mean ± SD		
Nausea				
• 1st 24hrs	3.41± 2.62	3.027 ± 3.266	19.38	0.03*
• 2nd 24hrs	0.756± 1.43	1.849± 2.552	19.44	0.01*
• 3rd 24 hrs	0.556± 0.932	1.511± 2.555	15.00	0.01*
Drowsiness				
• 1st 24hrs	2.99± 2.22	3.73± 2.56	15.58	0.02*
• 2nd 24hrs	1.71± 1.89	3.20± 2.66	19.83	0.01*
• 3rd 24 hrs	0.700± 1.72	2.92± 2.78	13.42	0.009**
Dizziness				
• 1st 24hrs	2.89± 2.18	1.97± 2.51	15.37	0.009**
• 2nd 24hrs	1.78± 2.13	1.71± 2.36	14.01	0.05*
• 3rd 24 hrs	0.867± 1.37	1.29± 2.05	11.69	0.05*

NS = Not significant **significant at P≤0.05* *** Highly statistical significant at P≤0.01*

Table (5): Comparison of all aspects of post-op. pain management outcome questionnaire between study and control group (n=60)

Aspects of post-op. pain outcome questionnaire	Groups		X^2	*P*-value
	Study group (n=30)	Control group(n=30)		
	Mean ± SD	Mean ± SD		
1-**Pain severity & pain relief** a) Pain severity	4.056±1.261	6.04± 2.11	25.686	0.001**
b) Pain relief	3.789±1.187	5.62± 2.08	21.293	0.03*
2-**Interference with function(activities)** a)Activities in bed	3.244±1.153	7.202±2.076	20.472	0.009**

Aspects of post-op. pain outcome questionnaire	Groups		X^2	*P*-value
	Study group (n=30)	Control group(n=30)		
	Mean ± SD	Mean ± SD		
b) Activities out of bed	3.789±1.187	5.616±2.077	21.293	0.03*
c) Falling asleep	4.855±2.063	6.789±2.305	20.286	0.05*
d) Staying asleep	4.911±1.722	6.056±1.873	15.425	0.03*
3-**Affective experience (emotional)** a) Anxious	1.80± 2.29	3.51± 2.89	13.59	0.05*
b)Depressed	0.667±1.729	0.467± 1.25	8.800	0.05*
c) Frightened	2.289±2.537	3.050± 2.75	9.800	0.1NS
d) Helpless	2.70± 2.45	3.21± 2.87	14.000	0.2NS
4-**Side effects(safety**) a) Nausea	0.356±0.932	1.511±2.555	15.00	0.01*
b) Drowsiness	1.71± 1.89	3.20± 2.66	19.83	0.01*
c) Dizziness	1.78± 2.13	3.71± 2.36	14.01	0.05*
5-**Perception of care(satisfaction)**	8.616±2.077	3.789±1.187	20.295	0.00001**

significant at P≤0.05* * Highly statistical significant at P≤0.01*

Table (6): Comparison of post-op. length of hospital stay among kidney surgery patients at urological department for both study and control groups (n=60).

Length of hospital stay post-operatively	Groups		X 2	P-value
	Study group (n= 30)	Control group (n= 30)		
	Mean ± SD	Mean ± SD		
Hospital stay in urological department	3.433± 0.728	4.900± 1.803	7.64	0.05*

**significant at P≤0.05*

Table (7): Correlation coefficient between using of non-pharmacological methods and post-Op. analgesic consumption in the study group. (n=30)

Non-pharmacological methods	Post-op. Analgesic consumption	
	r- value	p- value
• Using one or two methods	0.28	0.05*
• Using more than two method	0.69	0.001**

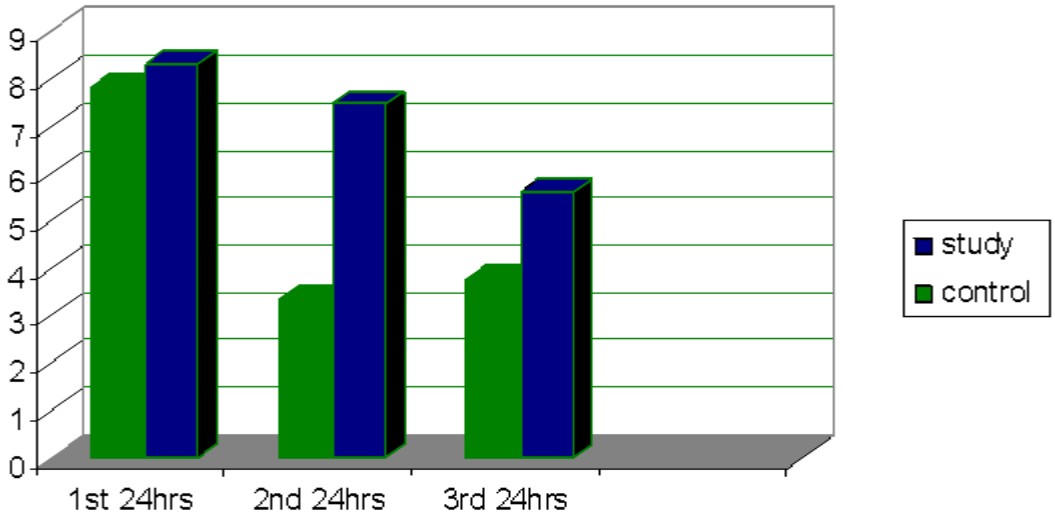
significant at P≤0.05* * Highly statistical significant at P≤0.01*

Table (8): Multivariate regression analysis affecting post-op. pain management outcome in the study and control groups (n=60)

Post-op. pain management outcome	Age				Gender				Education level			
	Study group		Control group		Study group		Control group		Study group		Control group	
	R-value	P – value	R-value	P – value	R-value	P – value	R-value	P – value	R-value	P – value	R-value	P – value
Pain severity & pain relief a)Pain severity	0.142	0.04*	0.169	0.06	0.156	0.03*	0.719	0.06	0.215	0.01**	0.119	0.07
b)Pain relief	0.142	0.04*	0.169	0.06	0.156	0.03*	0.719	0.06	0.215	0.01**	0.119	0.07
2-Interference with function(activities) a)Activities in bed	0.425	0.001**	0.042	0.258	0.206	0.02*	.12 7	0.4	0.188	0.03*	0.142	0.09
b) Activities out of bed	0.402	0.002**	0.119	0.07	0.212	0.04*	0.173	0.07	0.239	0.02*	0.059	0.246
c) Falling asleep	0.486	0.001**	0.127	0.4	0.291	0.01*	0.250	0. 3	0.295	0.001**	0.127	0.4
d) Staying asleep	0.472	0.001**	0.719	0.06	0.262	0.03*	.12 7	0.4	0.363	0.009**	0.192	0.09
3-Affective experience(emotional) a) Anxious	0.450	0.003**	0.236	0.08	0.327	0.02*	0.719	0.06	0.335	0.02*	0.215	0.08
b)Depressed	0.424	0.008**	0.029	0.680	0.355	0.02*	0.034	0.8	0.309	0.03*	0.036	0.97
c) Frightened	0.199	0.008**	0.031	0.6	0.038	0.154	0.002	0.4	0.241	0.003**	0.073	0.98
d) Helpless	0.182	0.02*	0.057	0.7	0.034	0.240	0.026	0.3	0.215	0.01*	0.114	0.99
4-Side effects (safety) a) Nausea	0.364	0.002**	0.020	0.356	0.000	0.407	0.163	0.08	0.185	0.04*	0.018	0.497
b) Drowsiness	0.488	0.0001**	0.680	0.4	0.069	0.221	0.183	0.08	0.264	0.01*	0.255	0.03*
c) Dizziness	0.478	0.001**	0.357	0.01*	0.084	0.216	0.364	0. 9	0.349	0.008**	0.680	0.4
5-Perception of care (satisfaction)	0.440	0.004**	0.296	0.04*	0.322	0.03*	0.007	0.4	0.290	0.03*	0.215	0.08
Analgesic consumption	0.575	0.006**	0.266	0.7	0.292	0.05*	0.034	0.8	0.269	0.02*	0.034	0.8
Length of hospital stay	0.456	0.002**	0.328	0.02*	0.338	0.01**	0.084	0.216	0.321	0.01**	0.311	0.02*

Significant At P≤0.05* * Highly statistical significant at P≤0.01*

Fig (1): Comparison between study and control group regarding to satisfaction of post-operative pain management (n=60)



Sociodemographic data demonstrated that the mean age for study group was (43.7±12.83) & for control group was (41±10.88). for gender, more than half of the studied groups were male (70 %) in both study & control groups. Concerning educational level, (23.3%) were illiterate in the study group &while in control (30%) were illiterate.

Table (1):demonstrated that there was statistical significant difference between both study &control groups as regards pain severity at 1st .2nd &3rd day post kidney surgery where pain severity was less in the study group patients than in the control group patients with (*P*-value= 0.05, 0.04, 0.01 respectively).Regarding pain relief there was significance statistical difference between both groups at 1st, 2nd & 3rd days post kidney surgery where pain relief was more in the study group patients than in the control group patients as (p-value =0.04, 0.01, 0.03 respectively).

Table (2): illustrated that interference of post op. pain with patients activities was less in the study group than in the control group, related to patient's activities in bed at 1st24 hrs & 2nd 24hrs and 3rd24hrs as (p-value = 0.004, 0.05& 0.009 respectively).According to activities of patient out of bed there were statistical significant at 1st 24hrs &2nd 24hrs and 3rd 24hrs as (p-value = 0.004, 0.01& 0.03 respectively). There was statistical difference between both groups related to patient's falling asleep at 1st 24hrs. 2nd 24hrs & 3rd 24hrs as (p-value = 0.006, 0.01& 0.05 respectively).Related to patient's staying a sleep there was significance statistical difference at 1st 24hrs,2nd &3rd 24hrs as (p-value = 0.001, 0.03& 03respectively).

Table (3): demonstrated that affective experience in the study group was better than affective experience in the control group; there was a statistical significant regarding patient anxiety at, 2nd and 3rd 24hrs as (*P*-value= 0.05 & 0.05 respectively) except in the 1st24hrs post-op. as (p-value = 0.475). Concerning depression there was statistical difference between study & control groups at 2nd and 3rd 24hrs post-op. as (p-value = 0.01& 0.05) .Regarding patient's helpless there were statistical difference between study & control groups at 3rd 24hrs as (p-value = 0.01)

Table (4): Revealed that post-op. side effects (safety) in the study group were less than side effects in the control group ;concerning nausea there was statistical difference among control& study groups in the 1st 24hrs, 2nd 24hrs & 3rd 24hrs post-op. as p-value (0.03,0.01& 0.01 respectively) . Regarding drowsiness there a statistical difference between study & control groups at 1st24hr, 2nd 24hrs & 3rd 24hrs where p-value (0.02, 0.01, 0.009 respectively**)**

Table (5): illustrated that the majority of the study group had statistical significant difference of all aspect of post-op. pain management outcome questionnaire compared to the control group, related to Pain severity & pain relief as *P*-value=0.001** 0.03* respectively .There was statistical difference related to interference with function (activities in bed & out of bed – falling asleep & staying sleep) as *P*-value = 0.009** 0.03*, 0.05*, 0.03* respectively. Related to Affective experience (anxious –depressed) there was statistical difference where *P*-value =(0.05*, 0.05*) respectively .Regarding side effects (Nausea, Drowsiness and Dizziness) the table demonstrated that there was a statistical difference in both study & control groups as *P*-value = (0.01*, 0.01*, 0.05*) respectively. For Perception of care (satisfaction) there was a highly statistical difference between both study & control groups where *P*-value= 0.00001**

Table (6): illustrated that post-op. hospital stay duration of the study group was less than in the control group with (*P*-value= 0.054)

Table (7): clarified that using more than two methods was positively correlated with post-op. analgesic consumption.

Table (8): demonstrated regression analysis that clarified statistical significant difference of pain severity & pain relief , interference with functions, affective experience perception of care, analgesic consumption, and length of hospital stay with (age, gender & educational level) in the study group & statistical significant difference with side effects and(age& educational level) in the study group.

Fig. (1): Showed that satisfaction of post-op. pain management was more in the study group compared to the control group there after implementation of the program in 1st 24hrs, 2nd 24hrs &3rd 24 hrs post –op.

Discussion

The Discussion was covered the main results findings as the following:

In the current study the results showed that there was statistical significant difference between both study & control groups related to post-op. Pain severity, This result was agreed with **Karabulut, (2011)** who reported that there was a significant difference between study group of adult Patients Who given Training program before inguinal hernia operation & control group related to pain severity ($p < 0.001$) this result was in agreement with **Sitepu, (2009)** who noted that there was a significant difference in the relative change of pain severity between the study & control groups (t14 = 5.29, p<.01).

As regard postoperative activities, the result of the present study showed that, highly significant

difference was found between study & control groups related to patient's post-operative activities in & out of bed. **Hui ,(2006)** agreed with this study findings reported that use of nonpharmacological pain management strategies as relaxation and music make ambulation more pleasant and thereby encourage patients to get up,moreover **Manyade, Berg &Gettins,(2005)** documented that pre-operative teaching program which include specific instruction with cognitive strategies such as reinforcement of positive outcomes, relaxation, imagery, and positive suggestions has an even greater impact on post-operative autonomic activity also **Thompson, Moulin & Hayre , (2006)** reported that preoperative information about postoperative pain management is significantly related to performance of postoperative activities early.

Concerning post-operative affective experience (anxiety& depression) the present study revealed that There was statistical significance difference related to post-operative anxiety as (p = 0.04), this finding was supported by **Karabulut, (2011)** who reported that the difference of post-operative anxiety score between study group of adult Patients Who given Training before inguinal hernia operation & control group within 48 hours after operation was statistically significant as (p < 0.05), also this result was agreed with **Summet, (2010)** who mentioned that The mean postoperative anxiety scores in the study group of patients undergoing Coronary artery bypass surgery who received preoperative education was lower than in the control group (as P =.01). and **Nilsson, (2008)** supported the findings of the present study who stated that; the effect of preoperative teaching program about using nonpharmacological pain management strategies on preoperative patients who undergo surgery reduced physiological indicators of anxiety. On the other hand this results of the present study was disagreed with **Shuldham,(2005)** who found that the impact of pre-operative education on recovery following coronary artery bypass surgery had no statistical significant differences between both groups as anxiety (P=0·09) and depression (P=0·62)

The current study showed that there was a statistical significance difference in both study & control groups regarding post-operative side effects (Nausea) as P-value = 0.015 , this result was supported by **Stergiopoulou, Birbas & Katostaras, (2007)** who reported that there was less postoperative nausea during the first 16 hours in the study group of patients undergoing Laparoscopic cholecystectomy who received preoperative Knowledge as (p = 0.039 **).**

The current study revealed that there was statistical significance difference among patient in study & control groups concerning satisfaction with pain management postoperatively, **Sjöling, Nordahl & Olofsson,(2007)** supported this results that conducted a comparative study in patients undergoing knee arthroplasty and concluded that postoperative pain declined more rapidly for patients in the Preoperative education group, and patients were more satisfied with pain management, also **Callaghan,(2006)** agreed with this results who found that the patients receiving preoperative information plus cognitive interventions reported a significantly higher level of post-operative satisfaction than those who didn't receiving preoperative information. On the other hand; this result was disagree with **McDonald, (2004).**who reported little or no improvement with Preoperative education on post-operative satisfaction.

The results in the present study revealed that there was statistical significance difference between study & control groups as regarded to length of hospital stay, In this respect **Moseley, (2005),** agreed with this results who mentioned that preoperative teaching had positive effect on reduction of length of postoperative hospital stay **,** also **Jones, Alnaib & Kokkinakis,(2009)** conducted a research of pre-operative patient education reduces length of stay after knee joint arthroplasty documented that The mean length of stay was significantly reduced from 7 days in the Conventional group to 5 days in the Education group (P < 0.01), in the same line this result was agreed with A meta-analysis **Theis & Johnson, (2005)** who showed that preoperative teaching improved postoperative outcomes in 67% of patients and reduced hospital stay by an average of one and one-quarter days, as well as **Shuldham,(2005)** supported this results who found out that The impact of pre-operative education on recovery following coronary artery bypass surgery There was a significant difference in length of hospital stay (P=0·01).

The present study showed that there was statistical significance difference among patient in study group who using more than two methods of non-pharmacological method in study group and those who use one or two nonpharmacological method of pain management and post-operative pain severity

Illgen & Pellino,(2007) agreed with this study results who stated that Multimodal therapy is encouraged in pain treatment to both reduce pain severity and side effects and in the same line with the current study. **Kshettry, Carole & Henly, (2006)** mentioned that the effect of providing multiple non-drug techniques on post-surgical pain scores decreased significantly in the complementary alternative medical therapies group on postoperative days 1 (p < 0.01) and 2 (p < 0.038).

Conclusions

Based on findings of the present study, it can be concluded that there was:

- A highly significant difference in the study group regarding to all aspect of pain management outcome compared to the control group.
- Statistical significant difference in the study group regarding length of hospital stay compared to the control group.
- Positive correlation of using more than two methods of non-pharmacological pain management strategies with post-op. analgesic consumption
- Highly significant difference in the study group regarding length of hospital stay compared to the control group**.** Statistical significant difference of regression analysis for pain severity & pain relief, interference with functions, affective experience perception of care, analgesic consumption, and length of hospital stay with (age, gender & educational level) in the study group.

Recommendations

For patients: Patient as the center of any designed care plan should be aware and involve in all parts of his /her care plan.

For Nurses: The preoperative teaching program should be given by the professional nurses. It is best achieve through verbal communication between patient and health care provider

In services:-Establishment of specialized pain management clinics in all health centers to help guiding and caring for patient with post-op. pain.

For research (further study):-Replication of the current study on larger probability sample is recommended to achieve generalize ability and wider utilization of the designed program.

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