Evaluation of Nursing Care Management for Diabetes Mellitus Patient with Total Hip Replacement

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Abstract

Objective: The aim of the study to evaluate the nursing care management for diabetes mellitus patient with total hip replacement after fractured hip.

Methodology: A field study carried out on patients with diabetes mellitus and have total hip replacement after fractured hip in orthopedic ward at the hospital of surgical specialization (male-female)during January 2002 to January 2003.Physical and psychological nursing assessment

immediately after the surgery was done for the both subjects (control and experimental) and then a scientific management with daily nursing care were provided to the experimental subject with daily nursing care to the patient condition by using a scientific and practical methods and leave the control subjects on the ward nurses. An evaluation was done to the experimental subjects physically and psychologically before departing to their families again.

Results: The results of the evaluation showed that most of the patients have many prognoses in their condition with less complication.

Recommendation: According to the results of this study, the researchers recommended that the importance of orthopedic nurses education all the scientific and practical methods for this type of patients which is most of them was aged and have diabetes mellitus.

Keyword: Nursing management, Diabetes mellitus patient, total hip replacement.

Introduction

Total hip replacement is the replacement of a severely damaged hip with an artificial joint. Although a large number of implants are available, most consist of a metal femoral component topped by a spherical ball fitted in to a plastic acetabular socket and held in the bone with methyl methacrylate (bone cement). Following a successful operation, the hip is free or nearly free of pain, has good motion, is more stable, and usually permits normal or near normal ambulating(l). The operation is usually reserved for patients over 60 with unremitting pain or irreversibly damage hip joints(2). All to often a hip fracture signals drastic changes in the lifestyle of an elderly person. Care of the elderly patient in the orthopedic unit is placed low on list of priorities surrounded by negative altitudes, the elderly patient is unlikely to recover rully(3).It seems that the patient with a fractured hip is a problem that no one is particularly anxious to handle(4) . It is easy, perhaps, to see why some health professions have developed a negative attitude towards patients with fractured hip, but

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this group *of patients provides a real nursing challenge, to deal with* feeling in the patient and their family about loss, and *to help promote independence is here, am*
because the patient with a fractured hip is essentially an elderly patient who requires surgery, post-operative care of these patients can be very demanding and yet the care they do receive often causes greater problems for them(5) .The elderly fractured hip patient may also fall victim to secondary illnesses post-operatively, and the famih may find watching a patient suffer continuously very defect. Here the nurse has responsibility not only for physical and emotional care, but to act as patient advocate particularly in dealing with medical staff(6) . The goal of the present study was tc evaluate the nursing care management post- operative open reduction (hip prosthesis) especially in elderly patient with diabetes mellitus for two weeks after the surgery ir. using scientific principles nursing care and its effect on patient condition progress which may effect early hospital discharge and return to home.

Methodology

Design: Evaluation study form was developed based on the literature and textbooks to indicated post-operative nursing management in diabetic patient who have hip replacement surgery which related to many causes. The evaluation form for nursing care management in diabetic patients who have total hip replacement surgery which included of physical condition (Pain related total hip replacement, Impaired physical mobility , Hemorrhage , Neurovascular compromise , Dislocation of prosthesis , Deep vein thrombosis and Wound infection) and psychological condition (Mental confusion from pain &shock , Mental depression .apathy, Uncooperative with the staff and Fear from disability and death) scientific and suitable nursing care management that the investigators can do it the orthopedic ward and it includes: Assess physical and psychological conditions after operation and before nursing care management. Evaluated the nursing care management **physical** and psychological at the end of first week for the study group and at the end second week evaluated for study and control subjects.

Data were collected in a special form to identify the characteristic of the sample and deal with these variables. A panel of five experts in orthopedic nursing and rehabilitation reviewed the evaluation form for content validity. The reliability (test- retest) that reached consensus and achieved an overall correlation score of (r=0.85) the analysis shows a fairly high degree of correlation and this coefficients are statistically significant at (pO.OOl) level. The evaluation nursing care takes approximately (2 weeks) post- operative arthroplasty, and it based on two independent nurses' observation and nursing care management in the ward environment. **Sample, Setting and Time:**

The sample consist (30) patients with total hip replacement and who have history of diabetes mellitus and over 2weeks duration nursing care management for each one as (a study subjects) and (30) patients as the same which considered as (a control subjects) whom admitted to the orthopedic ward in the hospital of surgical specialization during January2001 to January 2003. The criteria for selecting the subjects of the both groups.

1. All the patients have a medical history of diabetes mellitus for one year and more.
2. All the patients were adult (male and female) and their age ranged from 50 to 80 years.

3. All the patients stay and their hospitalization period at least 2 weeks after the surgery. **Data analysis:**

Descriptive statistics, including calculation of frequency and percentage of patient status physically and psychologically were used as indicators of evaluation to :he follow-up nursing care management and inferential statistic, correlation were employed as a measure of consistency in determine the reliability of the study **Results**

Table (1) The characteristic category of hip replacement with diabetes mellitus (study and control) groups.

Patients characteristics	Study group		Contro group	
	F	%	F	%
Age				
5: -60	10	33.3	10	33.3
60-70	15	**50**	**15**	**50**
- -80	5	16.7	**5**	16.7
Total	30	100	30	100
Sex	15	**50**	**20**	66.7
Male				
Female	15	**50**	10	33.3
Total	30	100	30	100
Type of fracture				
'. ; mplete	20	66.7	**15**	**50**
!r. complete	10	33.3	**15**	**50**
Total	30	100	30	100
Cause of fracture				
Traumatic	15	**50**	**15**	**50**
Pathological	5	16.7	**5**	16.7
I e generative	10	33.3	10	33.3
Total	30 \	100	30	100
3.S. test level				
150-190	10	33.3	10	33.3
190-230	15	**50**	10	33.3
130 and above	5	16.7	10	33.3
Total	30	100	30	100
ast medical history				
-Old fracture and dislocation	10	33.3	**15**	**50**
-Nutritional disorder	15	**50**	**5**	16.7
- Systematic disorder				
*Urology disease	20	66.7	**15**	**50**
* Circulatory disease	15	**50**	10	33.3
* Gastrointestinal disease	25	83.3	10	33.3
*Hormonal disease	10	33.3	**5**	16.7
*neoplasm disease	2	6.6	**1**	3.3
* Infection disease	20	66.7	**22**	73.3
* Skin disease	10	33.3	**5**	16.7

This table indicated that majority of age were (60-70) years, (50%) from the study sample in the both subjects and most of them were male (50%) of the studv subject and (66.7%) of the control subject. Related to type of fracture most of them were complete fracture (66.7% of the study subject while 50% of the control subject) and traumatic cause were the most in the both subjects (50%). With regard to level of glucose in the blood were (190-230)mg/dl, (50% of the study subject while 33.3 of the control subject). The majority of past medical history were urology disease (66.7% of the study subject while 50% of the control subject) and other majority of past medical history were infection disease (66.7% of the study subject while 73.3% of the control subject).

Table (2) Frequency and percentage of physical patient condition before providing nursing care management in both subjects

Physical status after operation & before providing nursing care	Present		Sometime		Not present	
	F	%	F	%	F	%
Pain related total hip replacement Study group Control group	**20** **25**	66.7 83.3	10 5	33.3 16.7	-	-
Impaired physical mobility Study group Control group	30 100 30 100		-	-	-	-
Hemorrhage Study group Control group	**15** **50 20** 66.7		**15** 10	**50** 33.3	-	-
Neurovascular compromise Study group Control group			**20** **20**	66.7 66.7	10 10	33.3 33.3
Dislocation of prosthesis Study group Control group			**15** 10	**50** 16.7	15 20	50 83.3
Deep vein thrombosis Study group Control group	**2** 10	6.6 33.3	**20** **10**	66.7 33.3	8 10	26.7 33.3
Wound infection Study group Control group	**15** **5**	**50** 16.7	**15** 10	**50** 33.3	15	50

This table showed that both subjects suffering from pain after the operation (66.7%o of the study subject while 83.3% of the control subject)and completely have impairment in their physical mobility (100% of both subjects) and hemorrhage (50% of the study subject while *66.7%* of the control subject). This table also showed that sometime of the sample they have neurovscular compromise (66.7%> of the both subjects) and also dislocation of prosthesis (50%) of the study subject while 16.7% of the control subject). Regarding to deep vein thrombosis the table showed that (6.6%) were present in the study subject and (33.3) of the control subject wound infection were present in (50%) of the study subject and (16.7%) of the control.

Table (3) Frequency and percentage of psychological patient condition before providing nursing care management

Psychological and emotional status after operation and before nursing care	Study group	%	Control group	
Mental confusion from pain &shock				
Present	5	16.7	10	33.3
-: metime	25	83.3	10	33.3
Not present			10	33.3
■ :al	30	100	30	100
Mental depression -esent 5: metime				
: present	10	33.3	10	33.3
	30	100	30	100
Apathy Present S metime	10	33.3	10	33.3
■:: present	30	100	30	100
"_"ncooperative with the staff Present				
- ".:*ctime* ' :: present	20	66.7	10	33.3
tal	*10*	33.3	20	66.7
Fear from disability and death	30	100	30	100
- resent S:				
metime	30	100	30	100
:: present				
tal 100	30		30	100

This table showed that (83.3%) of the study subject have sometime mental : ision from pain, while (33.3%) of control subject have present mental confusion m pain and both subjects have present depression (33.3% both of them) and the me percentage never it. All of the study and control subjects have present apathy '%), and (66.7%) of the control subject have present uncooperative with the staff, bile (66.7%) of the control subject have sometime uncooperative with the staff and of the study and control subjects have present fear from disability and ieath(100%).

Table (4) Frequency and percentage of the evaluation responses to the nursing care management in the study and control groups

Patient condition after providing the nursing care	study At the end of 1st		study At the end of		Control after end 2nd week	
-.ysical status Pain	F	%	F	%	F	%
related replacement rsent	15	**50**	5	16.7	**20**	66.7
netime : present	10	33.3	5	16,7	10	33.3
	5	16.7	20	66.6		

Impaired physical mobility Present Sometime Not present	15 10 5	50 33.3 16.7	5 5 20	16.7 16.7 66.6	20 10	66.7 33.3
Hemorrhage Present Sometime Not present	10 10 10	33.3 33.3 33.3	10 20 .	16.7 16.7 66.6	20 10	66.7 33.3
Neurovascular compromise Present Sometime Not present	25 5	83.3 16.7	20 10	66.7 33.3	10 10 10	33.3 33,3 33.3
Dislocation of prosthesis Present Sometime Not present	2 28	6.6 93.4	30	100	20 10	66.7 33.3
Deep vein thrombosis Present Sometime Not present	2 28	6.6 93.4	2 28	6.6 93.4	10 20	33.3 66.7
Wound infection Present Sometime Not present	5 25	16.7 83.3	30	100	10 10 10	33.3 33.3 33.3
Psychological and emotional Mental confusion from pain and shock Present Sometime Not present	1 2 27	6.6 90.1	30	100	5 10 15	16.7 33.35 0
Mental depression Present Sometime Not present	1 2 27	6.6 90.1	30	100	10 10 10	33.3 33.3 33.3 •
Apathy Present Sometime Not present	5 5 20	16.7 16.7 66.6	30	100	25 5	83.3 16.7
Uncooperative with the staff Present Sometime Not present	1 3 26	3.3 9.9 86.8	30	100	25 5	83.3 16.7
Fear from disability and death Present Sometime Not present	20 10	66.7 33.3	30	100	10 20	33.3 66.7

This table showed in the end of the second weeks after nursing care management that the pain related replacement were not present in (66.6%) Of the study subject while present in (66.7%) of the control subject. The impairment physical mobility

were not present in (66.6%) of the study subject while present in (66.7%) of the control subject. The hemorrhage were not present in (66.6%) of the study subject while present in (66.7%) of the control subject and neurovscular compromise were sometime present in (66.7%) of study subject while (33.3%) of the control subject. The dislocation of prosthesis were not present in (100%) of the study subject while sometime present in (66.7%) of the control subject. Deep vein thrombosis were not present in (93.4%)of the study subject while (66.7%) of the control subject. The study subject have not present (100%)of wound infection, mental confusion from pain and shock, mental depression, apathy, uncooperative with the staff and fear from disability and death, while control subject not present (33.3%) of wound infection, (50%) of mental confusion from pain and shock, (33.3%) of mental depression, and the control subject have present (83.3%) of apathy and uncooperative with the staff and they have sometime present (66.7%) of fear from disability and death.

Discussion

The findings of the study related to the characteristic category of hip replacement with diabetes mellitus (study & control) subjects, showed that age range between (60-70) were (50%) and (50%) were male and(50%) were female and also this table showed that (66.7%) of the study group have complete fracture, from traumatic cause (50%) and the fasting blood sugar range between (190-230)mg/dl. This table also showed that (66.7%) of the sample their past medical history include systematic disorders and infections disease and(83.3%)have gastrointestinal disorders table(l). This results agree with many references who said that the operation of total hip replacement is usually reserved for patients over 60 years old and irreversibly damaged hip joints. The following conditions are amenable to this type of surgery: infection and fractures. [1,2] .

In regarding to the physical status after the operation and before providing a nursing care management to the study subject and control group . The both groups suffering from pain after the operation and completely have impairment in their mobility with hemorrhage. This table also showed that sometime of the sample they have neurovscular compromise and also dislocation of prosthesis , but regarding to present deep vein thrombosis the table showed that (6.6%) are present in the study subjects and (50%) of study subject have wound infection table (2). This results agree with references who reported that postoperative problems such as dislocation of the hip prosthesis, pain, thromboembolism, hematoma and wound infection. [' '.

Concerning psychological status after operation and before nursing care management, (83.3%) of the study subject have sometime mental confusion from pain and suffering from shock and (33.3%)of the sample have mental depression and (33.3%) have never this problem, (100%) of the sample have apathy and (66.7%) of the study subject were uncooperative with the staff and (33.3%) in the control subject but (100%) of the both groups suffering from fear disability and death table (3). This results agree with references who states that psychological problems may be find after total hip replacement surgery such as mental confusion, mental depression, apathy, uncooperative with other and fear from disability and death [5,6]. The findings showed that in the end of the second week nursing care management the pain in the site of operation was relieved and their was no hemorrhage, neurovascular compromise and the artificial prosthesis was in site as it showed in the X-Ray and no wound infection at the end of the second week with control on the glucose level by use the both methods (diet and medication) and all these subjects they can movement

outside the bed and walking in the ward and can also depend on themselves as much as they can and the results indicated that all the percentages of not present problem (physical and psychological) of the control subject after the end two weeks of nursing care management were lower than study subject table (4). This result will agree with[1,2,3] which indicated that all the post-operative complication may be relieved after total hip replacement if the orthopedic nurse do all her management day-after-day scientifically and gradually and also not forget the emotional and psychological patient condition after this big health problem . this results also agree with references who reported that evaluation after intervention expected that outcomes :achieves comfort, achieves homeostasis, free of infection, demonstrates stabilized prosthesis location and adheres to therapeutic regimen and stable psychological and emotional status [8].

Recommendations Based on the study results ,the researchers recommended the following:

1. Adopt the nursing care management for the hip replacement patients in all the clinical setting of the orthopedic wards.
2. Further studied are required on larger number and on other hospitals which have orthopedic wards

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