

Original Article

The Effects of the Training Provided to Patients who are scheduled for Hip Prosthesis Surgery on the Level of Postoperative Comfort and Daily Activities

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Abstract

Aim: The aim of this study was to define the effects of the training provided to patients who are scheduled for hip prosthesis surgery on the level of post-operative comfort and activities in their daily lives.

Methods: This quasi experimental study was carried out with patients who had undergone total or partial hip prosthesis surgery. Research samples consisted of 60 patients (30 in the experiment, 30 in the control groups). Patients in the control group received routine nursery training from clinic nurses. Patients in the experimental group were provided with planned pre- and post-operative training as well as an educational booklet.

Results: The Perianesthesia Comfort and the General Comfort Questionnaire were found to be higher in the experimental group, and the difference was statistically significant ($p=.000$). The difference found between the control and experimental groups in the mean score of pre-operation daily activities was not statistically significant ($p=.171$). However, the mean score of daily activities one month after the surgery was found to be higher in the experimental group, and the difference was statistically significant ($p=.000$).

Conclusion: It was concluded that independency status was superior and provided higher levels of perianesthesia and general comfort scores in the experimental group compared to the control group after the operation.

Key Words: sleep, quality, reliability, validity

Introduction

The goals of hip prosthesis application are to relieve the patients' pain and discomfort, improving the joint function and increasing their level of movement and ability to perform daily activities (Temple, 2004; American Academy of Orthopaedic Surgeons, 2015). One of the major goals within the nursing field is to provide and maintain the comfort of patients. This is crucial, particularly in nursing practice. Especially in regard to surgical patients, almost every stage of the surgical course impairs the comfort of the patient in some way (Wilson & Kolcaba, 2004).

After surgery, patients do not fully understand how to walk with prosthesis, how their movements and positions will be restricted the complications that might develop, or how to

recognize these complications and which exercises should be done in order to reduce the possibility of discomfort. The patients may experience adaptation difficulties to their daily live after their discharge and later become re-hospitalized due to complications that emerge (Aciksoz & Uzun, 2007; Heine et al., 2004; Johansson, 2002).

The ability of patients to become fully independent again after surgery varies from patient to patient, all of whom require information and support to fully adapt back to their daily lives. Prolongation of the healing process as well as pain and limitation of movement negatively affects the quality of life and comfort of the patients. The studies conducted in our country regarding the

expectations and the information requirements of the patients both before and after operation indicate that nurses do not take an active role in the pre-operative training and information requirements of the patients, and their families cannot adequately meet these needs (Aciksoz & Uzun, 2007; Sayin & Aksoy, 2012; Dal et al., 2012).

An effective discharge education, based on the information requirements of patients, will enable prevention of these negative situations. It is reported in studies that discharge education can help patients with many of the problems that may arise at home and enable the patients to recognize potential issues; educated patients experience fewer problems with their daily activities, fewer incidences of complications as well as lower rates of morbidity and mortality.

Additionally, the satisfaction of the patients regarding the care delivered by nurses increases, anxiety, pain, repeated hospitalizations and costs are reduced and the patients' quality of life increases (Uesugi et al., 2013; Yilmaz, 2002; Johansson et al., 2005; Atici & Gozum, 2001; Gammon & Mulholland, 1996; Yoon et al., 2010). Seen together, all of this data indicates the importance of clear information at the time of discharge. Although all of the members of the health care team are responsible for the training of patients and their family during discharge, nurses play a key role in discharge planning (Erdil & Ozhan Elbas, 2001; Pieper, 2006; Coskun & Akbayrak, 2001).

A preparatory period in which the patients' requirements cannot be met and training provided without a plan will decrease the comfort of the patients before, during and after surgery and lead the patients to feel psychologically, physically and socially dependent, cause an inability to successfully complete their daily activities, the prolongation of the recovery duration and healing process, a long length of stay at the hospital and on all levels to a decrease of the patient's comfort.

Material and methods

Sample

This study was designed and conducted in the semi experimental model with a control group. The study was executed in the Clinics of Orthopaedic and Traumatology of a University Research Hospital and the a Regional Training and Research Hospital between July 2010 and

December 2010. The research population consisted of patients who had undergone either total or partial hip prosthesis surgery in the stated clinics between July 2010 and December 2010. The research sample consisted of 60 patients aged between 40 to 65 years. These patients had not had any psychiatric diagnosis and were willing to cooperate and communicate. The patients were selected with non-probability random sampling (30 in the experimental, 30 in the control groups).

Instrument

Data collection was performed using questionnaire forms, the Barthel Index, the Oxford Hip Score, the Perianesthesia Comfort Questionnaire and the General Comfort Questionnaire. Questionnaire Forms included questions about the socio-demographic characteristics of the patients.

The Barthel Index was developed by Mahoney and Barthel in 1965 (Mahoney & Barthel, 1965), and was tested in Turkey by Kucukdeveci et al (Kucukdeveci et al., 2000) for validity and reliability. Cronbach's Alpha value of the index was found to be 0.88. Using this index, the ability of a person to perform daily activities (eating, going to the toilet, bathing and going to an outside location) without help from others was assessed. The total score of the index is "100".

The Oxford Hip Score was developed by Dawson, Fitzpatrick, Carr and Murray (Dawson, 1998) in Nuffield Orthopaedic Centre, Oxford University, England, and its validity and reliability were tested by the same authors and published in 1998. The validity and reliability test for the Oxford Hip Score was carried out by Sendir (Sendir & Babadag, 2000) in Turkey and Cronbach's Alpha was found to be 0.89. The Perianesthesia Comfort Questionnaire was developed by Kolcaba (Kolcaba, 2003; Kolcaba & Wilson, 2002). The validity and reliability of the questionnaire to test its use on the Turkish population was conducted by Ustundag and Eti Aslan, and Cronbach's Alpha value was found to be 0.83 (Ustundag & Eti Aslan, 2010). The questionnaire includes 24 statements questioning the self-understanding and feelings of a patient that reflect the general thoughts about pre- and post-operative periods. Each statement on the questionnaire had a score of between 1 and 6 and ranges from "strongly disagree" towards "strongly agree". The maximum total score on the questionnaire is 144, and the minimum score is

24. The total score obtained is divided by the number of scale statements, and the mean score is then calculated and the result is expressed in the range of 1-6. A low score indicates a poor level of comfort and a high score indicates a good level comfort. The General Comfort Questionnaire was developed by Kolcaba in 1992 (Kolcaba, 1992). Conformity of the scale to the Turkish population was tested by Kuguoglu and Karabacak (Kuguoglu & Karabacak, 2008). They found Cronbach's Alpha value of the scale to be 0.85 with a high reliability. The scale is in the form of a 4-point Likert scale and includes a total of 48 statements. The maximum total score on the questionnaire is 192, and the minimum score is 48. The total score obtained is divided by the number of scale statements, the mean score is then calculated and the result falls in the range of 1 to 4. A low score indicates a poor level of comfort and high score indicates a good level comfort.

Nursing Intervention

Developing the Educational Booklet: The Educational booklet was designed by the researcher with a screening of the literature (Erdil & Özhan Elbas, 2001; Bodur, 2000; Sahlan, 2009). The booklet included the following topics: what is hip prosthesis, hip prosthesis surgery, the objective of the hip prosthesis application, risks involved with the hip prosthesis, how to put on varsity socks, things to do the night before the surgery and on the day of the surgery, situations experienced after the surgery, exercises to be done after the surgery, considerations about getting out of bed, sitting, walking and daily activities, wound care, nutrition, pain control, medications and care at home.

Data Collection

The data was collected by the researcher in the stated clinics between July 2010 and December 2010. Data collection forms were given to the patients in the control and experimental groups as follows:

- Questionnaire forms, the Barthel Index and the Oxford Hip Score on the day of admission.
- The Perianesthesia Comfort Questionnaire with in 24 hours of the operation.
- The General Comfort Questionnaire and the Barthel Index on the day of discharge.
- The Barthel Index and the Oxford Hip Score after one month of discharge.

Patients in the control groups were not provided with any training by the researcher with the exception of routine nursing care and the training provided by the clinics.

Training of the Experimental Group

Patients who had undergone hip prosthesis surgery in the clinics where the research was carried out were discharged after 7-10 days following the surgery. The topics described in the educational booklet were explained to the patients in the experimental group in chapters until the day of discharge. The educational booklet developed by the researcher was given to the patients before education commenced. The time of the training was agreed on with the patients, considering the working program of the service. The training was given individually in an otherwise empty room. The training provided to the patients consisted of two sections; namely pre-operative and post-operative training.

Pre-operative Training

On the day of admission

The clinic was introduced. Information was provided on the tests to be carried out before the surgery, the anatomy of the hip, the objective of the hip prosthesis application and complications that could develop after the surgery. Questions that the patients had were answered.

The Day before Surgery

Information was provided to the patients about preparations on the night before the surgery, preparation for the day of the surgery, situations that could be experienced after the surgery, deep breathing, coughing and exercises to be done in the early period after the surgery, how to put on varsity socks and how to get out of bed, sit, walk and go about daily activities and the exercises were shown practically and applied to the patients by the trainer. Any questions the patients had were answered. The duration of the training varied according to each patient, although each training period lasted for 45 minutes on average.

Post-operative Training

Post-operative I. Day

Considerations about getting out of bed were repeated to the patient. Deep breathing and coughing exercises were applied. Considerations about the nutrition to prevent constipation were described again. Information was provided on how to manage pain.

Post-operative II. Day

The patient was helped out of bed. Deep breathing and coughing exercises as well as early period exercises were completed. Information was provided on how to sit on the toilet.

Post-operative III. Day

The patient was helped out of the bed and walked. Deep breathing and coughing exercises as well as early period exercises were completed. Information was provided on wound care.

Post-operative IV. Day

The patient was helped out of the bed and walked. Deep breathing and coughing exercises as well as early period exercises were completed. Information was provided on the applications to facilitate daily activities at home.

Post-operative V. Day

The patient was helped out of the bed and walked. Deep breathing and coughing exercises as well as early period exercises were completed. Information was provided on how to climb up and down the stairs.

Post-operative VI. Day

Information was provided to the patient about the exercises that should be done in the late period, the medications that should be taken at home, nutrition, wound care and daily activities such as bathing and getting in and out of the car.

Post-operative VII. Day and Subsequent Days

Information provided after the surgery was repeated, and the patient's questions were answered. The duration of the post-operative training varied according to the patients, although each interview lasted for 25 minutes on average.

Effective communication with patients continued, offering them support and encouraging them to ask any questions during the training, and ensuring that those questions were answered.

Data Analysis

Data coding and statistical analyses was carried out using the Statistical Package for the Social Sciences for Windows (SPSS) 15.0 package software.

Chi-square analysis was used for the comparison of independent variables in the experiment and control groups and the student-t-test for comparison of the mean scale scores in the control group.

Results

Of the participants, 53.3% in the control group and 43.3% in the experimental group were female. 60% of the patients in the control group and 70% in the experimental group were operated on as a result of fractures. 66.7% of the patients in control group and 43.3% in the experimental group had undergone partial hip prosthesis surgery. The mean age of the patients was found to be 61.5 ± 6.04 in the control group and 59.7 ± 7.8 in the experimental group (Table 1).

The difference found between the control and experimental groups in the mean score of pre-operation daily activities was not statistically significant ($p=.171$). However, the mean score of daily activities one month after the surgery was found to be higher in the experimental group, and the difference was statistically significant ($p=.000$) (Table 2). Pre-operation, the difference found between the control and the experimental groups in the mean Oxford Hip Score was not statistically significant ($p=.204$).

The mean Oxford Hip Score one month after the surgery was found to be lower in the experimental group, and the difference was statistically significant ($p=.000$) (Table 3). The mean scores of the Perianesthesia Comfort Questionnaire and General Comfort Questionnaire were found to be higher in the experimental group compared to the control group, and the difference was statistically significant ($p=.000$, $p=.000$) (Table 4).

Discussion

Besides pre-operation preparations and the planned training, post-operation care also plays an important role in the recovery course of patients after their surgical operation. Rapid healing and the ability of patients to return to their daily activities as early as possible is closely linked with pre-operation preparations and post-operation care (Ay, 2007). Because the nurses carry out the care and treatment of the patients, these patients can easily gain access to the nurses. Therefore, the availability of the nurses to the patients for long periods of time will enable patients to feel more secure. Therefore, nurses undertake a more crucial task compared to other health care staff in ensuring the comfort of patients and their independence in accomplishing daily activities (Merkoirus et al., 1999).

Exercises included in the training provided to the patients strengthened their muscular structure. Therefore, patients in this group increased their independence in accomplishing daily activities such as getting out of bed, walking and going to

the toilet. This resulted in a higher mean scores of daily activities in the experimental group compared to the control group. This reflects the positive effects of the training on the accomplishment of daily activities (Table 2).

Table 1: Distribution of the Demographic Characteristics

	Control Group		Experiment Group	
	n	%	n	%
Gender¹				
Female	16	53.3	13	43.3
Male	14	46.7	17	56.7
Surgery type¹				
THP*	10	33.3	17	56.7
PHP**	20	66.7	13	43.3
Prosthesis¹ indication				
Degenerative diseases of the hip	12	40	9	30
Fracture	18	60	21	70
Mean age ²	61.5±6.04		59.7±7.8	
¹ number, percentage				
² mean ± standart deviation				

*THP: Total hip prosthesis **PHP: Partial hip prosthesis

Table 2: Comparison of the mean scores of daily activities between the control and the experimental group pre-operation, during the discharge and one month after the surgery

Barthel Index						
Scale Application Time	Control Group (n= 30)		Experimental Group (n= 30)		t	p
	Mean	SD	Mean	SD		
Pre-operation	46.37	26.11	37.50	23.41	1.385	.171
During the Discharge	46.00	5.15	50.33	4.72	3.396	.001
1 month after the surgery	74.83	6.63	84.00	7.47	5.026	.000

t : Independent Samples T Test was used.

Table 3: Comparison of the mean oxford hip scores

Oxford Hip Score						
Scale Application Time	Control Group (n= 30)		Experimental Group (n= 30)		t	p
	Mean	SD	Mean	SD		
Pre operation	52.33	9.25	54.97	6.34	1.286	.204
One month after the surgery	30.90	4.58	23.07	1.74	8.754	.000

t : Independent Samples T Test was used.

Table 4: Comparison of the mean scores of perianesthesia comfort questionnaire and the general comfort rating scale

	Control Group (n= 30)		Experimental Group (n= 30)		t	p
	Mean	SD	Mean	SD		
Perianesthesia Comfort Questionnaire	3.31	0.32	4.93	. 0.66	12.010	.000
General Comfort Rating Scale	3.53	.24	3.73	.15	3.834	.000

t : Independent Samples T Test was used.

In a study conducted by Yeh et al with patients that had undergone hip prosthesis, the ability of the patients to perform pre-operative care was not found to be significantly different. However, following their discharge from hospital, the ability levels of the patients were found to be higher and more statistically significant in the experimental group that received training through written resources and CDs compared to the control group, who received only routine training in the clinic, for performing daily activities such as bathing, going to the toilet, changing position, climbing up and down the stairs and walking (Yeh et al., 2005).

In a study conducted by Ben-Morderchai et al with patients who had undergone hip prosthesis surgery, the patients' ability to perform daily activities in the post-operation period were found to be higher in patients who received pre-operative training (Ben-Morderchai et al., 2010).

Similarly, in a study conducted by Wang et al investigating discharge durations and the functional recovery of patients who had undergone primary total hip prosthesis, the mean scores of the patients in the experimental group drew an ever increasing curve, as can be seen in our study (Wang, 1998).

Other studies have also found that patients have difficulty in performing daily activities such as bathing, dressing and going to the bathroom, feeling a lack of independence in the post-operative period (Cree et al., 2001; Bilik, 2007).

When the mean Oxford Hip Scores evaluating the healing status of the hip joint were examined, the mean scores were found to be higher in the control group, and the difference was statistically significant ($p=.000$). The low mean scores obtained from the Oxford Hip Score indicate that the healing level of the hip joint was enhanced. Besides the possibility of physical lost, surgery is also a strong cause of stress. Therefore, pre-operation preparations are vital for patients. Patients may be afraid of the risk of surgery, even if they are aware of the benefits. One of the most significant causes of pre-operative anxiety is the fear of the unknown. Patients who are not sufficiently prepared before their surgery cannot coordinate. Training provided to the experimental group prepares the patients both physically and psychologically. Patients cope better with the stress of the surgery owing to this preparation course. Steroid hormones, which are released as a reaction to stress, are released less because of the preparation, positively affecting the healing process (Erdil & Ozhan Elbas, 2001).

We can interpret this to mean that the planned training provided to the patients positively affects their healing status.

In her study, Bilik trained patients in the experimental group using an educational booklet, then followed-up the patients post-operation via phone to examine their conditions and found the healing status to be better in patients in the experimental group (Bilik, 2007). Comfort is

providing patient satisfaction by controlling the factors that may affect their rest in the hospital including their concerns, desires, expectations and requirements. In other words, comfort occurs when patients are stress-free and able to overcome problems. In the literature, the nurses who are important members of the health care team have been responsible for defining the comfort requirements of the patients and implementing nursing interventions in the case that their needs could not be met (Kolcaba, 2003).

Like in many forms of therapy, the anxiety levels of patients also rise during the surgery, negatively affecting their level of comfort. Success in surgical treatment is not due to technical knowledge and skills alone. At the same time, pre-operation preparations and training as well as post-operation nursing care implementations must be, planned and qualified. Discharge training begins with the admission of patients to surgical clinic and continues until the day of discharge. Planned training provided to the patients reduces their concerns about the surgery, increases patient satisfaction and positively affects the comfort level of patients. In the present study, the mean score of the Perianesthesia Comfort Questionnaire was found to be higher in the experimental group, and the difference was statistically significant ($p=.000$). A significant difference between the groups in terms of the mean scores in levels of comfort can be explained by the decrease of the concerns of patients and the increase of their control over their pain through their participation in their own care due to the training that they received.

In a study conducted by Giraudet-le et al, patients who received verbal training before total hip prosthesis surgery were found to experience significantly less anxiety in the pre-operative period, resulting in a shorter recovery time (Giraudet-Le Quintrec et al., 2003).

Fortina et al studied the effects of the booklet and training on physical recovery and satisfaction in patients who had undergone total hip prosthesis. They found patient satisfaction regarding nursing higher in the patients who received booklets and training (Fortina et al., 2005).

In a study conducted by Doering et al with patients scheduled for hip prosthesis surgery, anxiety and stress were found to decrease in the patients who received pre-operation training with videotapes. It is reported in the literature that

levels of anxiety decrease in patients with increased comfort levels (Doering et al., 2000). Given that comfort brings a relief of stress and sense of peace to patients, as opposed to the feelings of fatigue, restlessness and stress brought about by anxiety this inverse relationship is natural.

The findings of this study regarding levels of post-operative comfort support our hypothesis that nursing interventions and training support are effective in increasing the degree of comfort in individuals in line with the comfort theory developed by Kolcaba.

Conclusion

This study was conducted to define the effects of training provided to patients scheduled for hip prosthesis surgery in the Clinics of Orthopaedic and Traumatology of X University Research Hospital and the X Regional Training and Research Hospital. In this study, the level of daily activities was found to be higher in the experimental group compared to the control group during discharge and one month after the operation. The level of perianesthesia comfort and general comfort were found higher in the experimental group compared to control group.

Considering the results of this study, the effective and planned training programs regarding surgery and post-operative care at home should be implemented from the time of admission for patients undergoing hip prosthesis surgery. This training program should include not only written sources, but should also be supported with visual materials, and nurses should be supported with in-service-training in order to be able to play an effective role in patient training.

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