Surgical Patient Education: Systematic Review 2002-2012

Cerrahi Hasta Eğitimi: Sistematik Derleme 2002-2012

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ABSTRACT Objective: To determine surgical patient education interventions and to explore the outcomes of randomized controlled trials from 2002 to 2012. **Material and Methods:** Database searches were carried out in December 2011 and May 2012 on Cochrane Library, PubMed, Science Direct, Cambridge, and Proquest Medical and Health Package Wiley Interscience files from 2002 to 2012, using the inclusion criteria of 'adult surgical patients', 'nursing', 'pre-operative', 'postoperative', 'patient education in randomized controlled trials' and 'English language'. Data analysis in December 2011 and May 2012 focused on assessing the interventions and the outcomes of the studies. **Results:** The database search yielded 21 studies. Most of the interventions concerned preoperative surgical patient education (60%) and focused on general surgery (33.3%). Most of the interventions (81%) reported positive effects, and four studies (19%) showed negative effects. Although the number of reported positive effects were higher than negative effects, there was not a statistical relationship between periods and effects of outcomes (chi-square tests, p=0.55, p>0.05). **Conclusions:** Patient education may have a very positive effect, but it is very difficult to reveal the effects and display. The findings suggest that more research should be undertaken to establish, in more detail, the elements that make up surgical patient education and their uses. The results of this review confirm that information, which is specific to individual patient needs, has a significant role for surgical patients.

Key Words: Education, nursing; surgery

ÖZET Amaç: 2002-2012 yılları arasında yapılmış randomize kontrollü çalışmalarda, cerrahi hasta eğitiminin hasta sonuçlarına etkisinin incelenmesi amacı ile planlanmıştır. **Gereç ve Yöntemler:** Aralık 2011- Mayıs 2012 tarihleri arasında Cochrane Library, PubMed, Science Direct, Cambridge, and Proquest Medicaland Health Package Wiley Interscience veri tabanlarından "hemşirelik", "ameliyat öncesi", "ameliyat sonrası", "randomize kontrollü çalışmalarda hasta eğitimi" anahtar kelimeleri kullanılarak 2002-2012 yılları arasında yapılmış randomize kontrollü hemşirelik çalışmaları taranmıştır. **Bulgular:** Veri tabanlarında yapılan tarama sonucu belirlenen kriterlere uygun 21 çalışmaya ulaşılmıştır. Çalışmaların çoğu (%60) ameliyat öncesi cerrahi hasta eğitimini içermektedir ve %33,3'ü genel cerrahi hastalarına yöneliktir. Yapılan hasta eğitimlerinin %81'i pozitif, %19'u negatif etki göstermiştir. Yapılan hasta eğitimlerinin sonuçlarının olumlu olduğunu belirten çalışmaların sayısı fazla olmasına rağmen ameliyat dönemi ile sonuçların etkisi arasında istatistiksel olarak anlamlı bir fark bulunmamıştır (p=0,55, p>0,05). **Sonuç:** Cerrahi hasta eğitiminin, hastalar için önemli bir rolü ve olumlu sonuçları olmasına rağmen, hastalara özgü bireysel eğitimin sonuçlarının uygulamaya yansıması ile ilgili daha ileri çalışmalara gereksinim vardır.

Anahtar Kelimeler: Eğitim, hemşirelik; cerrahi

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Providing patient and family education is an important nursing role and a core competency of nursing practice. Successful education can improve health outcomes, decrease hospital readmissions, decrease healthcare costs, and develope patient and family satisfaction. Having surgery is major event in any person's life.[1-7] Each person responds differently

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to surgery. Surgical nurse improves quality of patient care through education, research, innovation and leadership for surgery. Evidence-based practice is an important approach to provide the best quality of care to patients and their families. Evidence-based practice improves patient outcomes as compared to traditional practice.[8]

OBJECTIVE

Although the delivery of individualised nursing interventions is important there is limited evidence about how these interventions enhance patient outcomes.[4] Numerous research evidence demonstrate the benefits of patient education but so little work has been done to analyse its general effectiveness.[2,9-11] Generally patient education studies use a descriptive design; only couple works has been done as randomised controlled trials. This review is focused upon studies of patient education using experimental and control intervention designs. Surgical patient education covers various aspects from the preoperative stage at home through to the preoperative and postoperative stages at hospital to the postoperative stage at home. Purpose of education; helping to individuals who need of preoperative and post-operative care, healthcare team to facilitate them to get help when needed, accelerate the healing process and to ensure the transition to normal life as soon as possible.[1-6]

Nowadays surgical patients' hospital stays have become shorter and pre-admission education is more common.[2,12] This, in turn, means that there is less time now to teach patients. At the same time, it is agreed that nurses need to invest greater effort in patient education. In addition, nurses needs to have new tools for both implementing and evaluating patient education.[2,13]

Patients need to get information about their surgical periods. The physical and psychological stress experienced by patients both before and after surgery has been discussed in numerous studies and the findings suggest that patients feel they need more information about their surgery.[2,9,14-16] On the other hand, patients are generally satisfied with the information they receive.[1,17,18] However, this does not mean that patient education is effective: patients may be satisfied with the counselling they receive, but still be uncertain about many care-related issues and problems.

The patient education provides for patients to manage the effects of surgery, reduces complications during the postoperative period, increases patient satisfaction and has positive effects on the healing process.[5,19] So it will provide to help avoid such experiences, the purpose of patient education is to empower patients, to give them greater decision-making authority in matters concerning their care.[2,20] According to randomised controlled trials about surgical patient education, patients feel they need more information requirement about their surgery to reduce their stress.[2,14-16]

Empowerment in patient education involves enabling patients to enhance their social, problem-solving and communication skills raising their consciousness about health values, needs and goals and so facilitating their ability to manage their health problems.[20-22] It has been linked with the knowledge required by the patients to manage their health problems which have six dimensions: biophysiological, functional, social, experiential, ethical and cognitive.

In this review, we have examined experimental and control intervention studies of surgical patient education from 2002 to 2012. Earlier reviews in this field have been confined either to preoperative studies, specialised surgical patient groups, different study designs, or they have been carried out more than 20 years ago.[2,23-28]

Johansson et al. made a same review between 1990-2003 years. At the same time, Suhonen and Leino-Kilpi made a similar review between 1994-2004 years. Johansson focused on randomized controlled studies about surgical patient education by given nurses, but Suhonen and Leino-Kilpi did not limite to randomized controlled studies. Most patient education studies use a descriptive design, whereas intervention studies using an randomized controlled design remain comparatively scarce-this in spite of the fact that randomized controlled studies and their corroboration approach offer the most powerful methods for testing hypotheses.[2,29] The focus in this review is upon studies of patient edu-

cation using randomized controlled designs and this research base on the same design with Johansson et al (2004). We performed their aim for 2002-2012 years.

The aim of this review is to assess the interventions carried out in surgical patient education and to explore the outcomes of experimentally designed studies from 2002 to 2012.

MATERIAL AND METHODS

This review was limited to randomised controlled trials with adult surgical patients. These studies focused on the nursing intervention of surgical patient education. The evidence was to be gathered from experimental studies only, but since the number of such studies was quite limited. This study was performed in December 2011 and May 2012. Cochrane Library, Pubmed, Science Direct, Cambridge, Wiley Interscience and Proquest Medical and Health Packaged databased were searched and limeted to period of 2002-2012. "Preoperative", "postoperative", "surgery", "education" key words were used. All references matching the keywords and meeting the inclusion criteria were included. The abstracts were checked against the inclusion criteria with regard to participants, interventions and designs. The relevant references were identified and the full texts acquired. Once the full texts had been checked, complete lists of the studies included and excluded were drawn up.

ANALYSIS

Data analysis included assessing the interventions and outcomes of the studies. The interventions were assessed by population, sample size, and the content of experimental and control group interventions and conclusion. The results were assessed by reference to their measures, measurements and statistically significant effects. Assessments were accomplished in the search phase of the study by checking that all the studies included had at least one characteristic of experimental research: random sample, control group or manipulation of the treatment.[30] All these studies were printed and analysed by six authors separately after that they were made classification depends on the studies.

RESULTS

The data based search with the keywords "preoperative", "postoperative" and "surgery", produced 672.853 references for the period from 2002 to 2012. When these educational keywords were combined with surgical nursing area keywords "surgery", "operation", "nurse"the figure was 75,868 references. In the data bases search on Cochrane Library, patient education and nursing connection produced 729 hits, Pubmed 374, Science Direct 621, Cambridge 13, Wiley Interscience 268 and Proquest Medical and Health Package 289 hits; when this was narrowed down to the surgical and educational connection.

All of these hits were also included the 83 articles found. When we read the abstracts, we took into account 40 to be suitable for this study and provided the full texts. After reviewing the whole texts, nineteen articles were excluded, leaving us with the final sample of 21 studies. The sifting process of searching and filtering was done by six people. The sifting process was shown in (Figure 1).

PATIENT EDUCATION INTERVENTIONS IN SURGICAL NURSING

The interventions were assessed by reference to their population, timing, and the content and methods of the experimental and control interventions and conclusion (Table 1). The biggest single patient group in these studies was represented by general surgery (33,3%), followed by cardio vascular surgery patients (28,57%), orthopedic surgery patients (23,8%), urologic surgery patients (4,76%), urogynecology surgery patients (4,76%) and transplantation surgery patients (4,76%).

The timing of the interventions ranged from the preadmission to the post hospitalisation periods. Most of the interventions 62% (n=13) were carried out in the preoperative stage (Table 1), followed by postoperative stage 19% (n=4) (Table 2) and both preoperative and postoperative stage 19% (n=4) (Table 3). The sample sizes (n) ranged from 16 to 406 (mean = 79.38).

The content of the experimental interventions varied widely. All preadmission and preoperative experimental interventions included preoperative in-

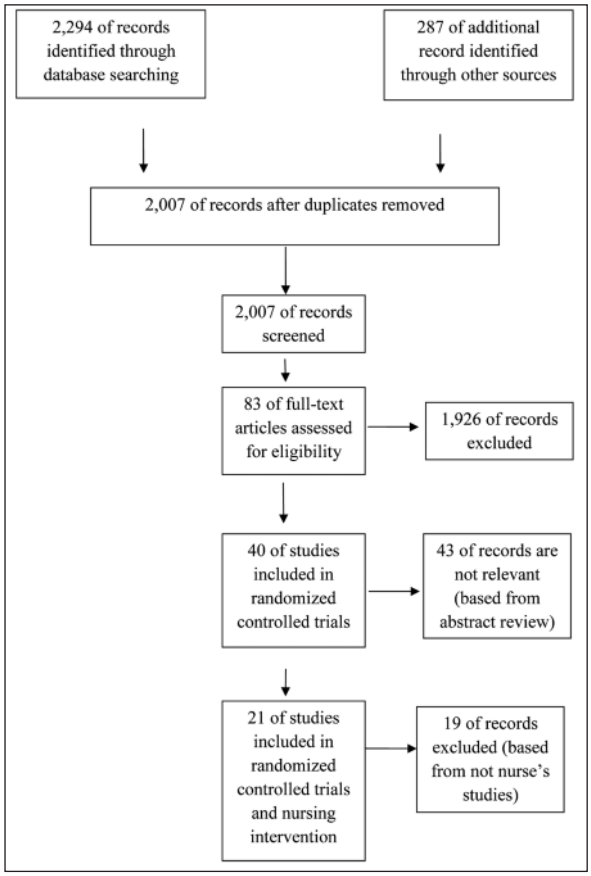

FIGURE 1: Sifting process for the systematic literature review.

formation and postoperative care.[6,31-39] Some of preoperative interventions involved smoking cessation programme.[40,41] Postoperative interventions focused on information, functions and exercises related to postoperative discharge, care, recovery, anxiety and pain.[42-44] Some interventions involved both group, preoperative and postoperative information.[3,41,45,46]

The methods of education applied in the interventions also varied. Verbal, written and visual education were given to intervention groups. Some of the educations were provided verbal phone call. Most of the interventions the control group was referred with terms "usual, routine, standard, traditional or only" controls. Other ways to explain the intervention and control groups were such as unstructured/structured and different education techniques and different timing in education.

MEASURES AND MEASUREMENTS OF PATIENT OUTCOMES

The analysis was based on an assessment of the outcome measures used and on cross-tabs of the outcome measures by empowerment aspects. The measurements were analysed with number and persentage. The most common measures in the subgroup of aspects of empowerment:

Biophysiological = pain relief e.g.; functional = activities and exercises, functional status e.g.; cognitive = knowledge, self-efficacy e.g.; experiential = anxiety, satisfaction e.g.

Cognitive aspects were frequently mentioned in these studies (47.6%). The second most commonly measured aspect was biophysiological (23.8%) and experimental (23.8%). Functional aspects such as pain were measured quite rarely in these studies (4.8%).

Biophysiological aspects were measured as 15.4%, functional aspects were measured 7.7%, cognitive aspects were measured 61.5%, and experimental aspects were measured 15.4% in preoperative period. Biophysiological aspects were measured 50%, functional aspects were not measured, cognitive aspects were measured 25% and experimental aspects were measured 25% in postoperative period. Biophysiological aspects were measured 25%, functional aspects were not measured, cognitive aspects were measured 25% and experimental aspects were measured 50% in preoperative and postoperative period.

More than half of the measures used in preoperative intervention studies related to the cognitive aspects of empowerment. Half of the postoperative intervention studies about biophysiological aspects, and half of the preoperative and postoperative intervention studies related to the experiential aspects of empowerment.The percentages of measures were shown in (Figure2).

Positive and negative effects also occur according to the results of the study that are divided into sub-groups. Results of the study were found to be effective 81% (n=17) in the positive, 19% (n=4) in the negative. Studies in the preoperative period, 76.9% positive effective results, 23.1% were found negative effective results. Studies in the postoperative period, 75% positive effective results, 25% were found negative effective results. Studies in the pre and postoperative period, 100% positive effective results were found. Many kind of educational methods were used

TABLE 1: Details of preoperative studies.

Study and design description	Population	Time	Experimental intervention	Control intervention	Conclusion
Lewis et al. (2002) Randomisation two groups	Total joint replacement patients, (n=58)	Preoperative	View an interactive "Having Surgery" Digital Video Disk. (n=29)	View a videotape "Having Surgery". (n=29)	This study showed greater knowledge and more physical therapy participation in those educated using Digital Video Disk.
Møller et al. (2002) Randomisation two groups pre- and posttest	Primary elective hip or knee alloplasty patients, (n=120)	Preoperative	Smoking intervention (counselling and nicotine replacement therapy). (n=60)	Usual care. (n=60)	An effective smoking intervention programme 6–8 weeks before surgery reduces postoperative morbidity.
Watt-Watson et al. (2004) Randomisation two groups	Coronary Artery Bypass Graft surgery patients, (n= 406)	Preoperative	Standart care+Pain booklet (n=202)	Standart care. (n=204)	No statistically significant differences between standard care and intervention groups were demonstrated at baseline in outcome variable data or patient characteristics. As the results of the intention to treat and protocol compliant analyses were the same, only the intention to treat analyses will be presented. Patient characteristics and length of stay were similar for the standard care and intervention groups.
Asilioglu and Senol (2004) Randomisation two groups pre- and posttest	Cardiac surgery patients, (n=100)	Preoperative	The intervention group were given a planned teaching according to the patient education booklet. (n=50)	The control group were informed about pre- and postoperative routines. (n=50)	There was no statistically significant difference in the state and trait anxiety scores between the groups, and the patients in the intervention group had lower scores than the patients in the control group. In addition, all pa tients in the intervention group stated that they were satisfied with the preoperative teaching given by the researcher.
Chumbley et al. (2004) Randomisation three groups	Surgery patients (n=225)	Preoperative	Received a patient information leaflet. (n=75), Received a pre-operative interview. (n=75)	Received routine information. (n=75)	Patients felt better informed and less confused after written pre-operative information but this had no effect on pain relief, anxieties about addiction and overdose and knowledge of side-effects. A pre-operative interview was ineffective.
Chaudhri et al. (2005) Randomisation two groups pre- and posttest	Elective colorectal surgery patients, (n=42)	Preoperative	Intensive preoperative teaching. Intervention for the study group included two preoperative visits in the community during which patients were taught with audiovisual aids to use and change the stoma pouching system. (n=21)	Standart postoperative stoma education. (n=21)	Stoma education is more effective if undertaken in the preoperative setting. It results in shorter times to stoma proficiency and earlier discharge from the hospital. It also reduces stoma-related interventions in the community and has no adverse effects on patient well-being.
Pearson et al. (2005) Randomisation two groups	Colonoscopy patients, (n=199)	Preoperative	The choice condition (n=100) patients in the choice condition elected to watch the video (n=68), chose not to watch the video. (n=32)	To-choice condition (n=99) patients were randomized to watch the video (n=50) and were randomized to the no-video condition. (n= 49)	Watching the video was associated with improvements in short-term knowledge. There was, however, no significant effect of the choice or video conditions on anxiety or patient satisfaction.

cont'd →

TABLE 1: *Cont'd.*

Deyirmenjian et al. (2006) Randomisation two groups	Coronary Artery Bypass Graft surgery patients, (n=110)	Preoperative	Received a special educational session on their admission day and had a tour of the cardiac surgery unit. (n=57)	Followed the routine hospital protocol, which encompassed almost no preoperative education or a tour. (n=53)	Unlike most studies published previously, which noted the benefits of preoperative patient education, this study with the Lebanese clients, failed to support earlier findings.
Johansson et al. (2010) Randomisation two groups pre- and posttest	Hip arthroplasty patients, (n=59)	Preoperative	Received this same material as well as a telephone educational session. (n=29)	Received written educational material about pre- to postoperative issues. (n=30)	Written educational material seems to be a good choice for pre-admission patient education compared with telephone counselling, particularly when patients are knowledgeable about care-related issues before admission. However, education via telephone is experienced by patients as more empowering than written educational material.
Wong et al. (2010) Randomisation two groups	A traumatic limb fracture patients, (n=125)	Preoperative	Received the CBEI (The Criterion-Based Evaluation Initiative) before surgery, and standard care in terms of surgery, wound care, physiotherapy programme, routine pain assessment and pain management regimen. (n=62)	Received standard care. (n=63)	This study suggests that CBEI (The Criterion-Based Evaluation Initiative) may play a substantial role in achieving better pain control, reducing pain among Chinese patients for the first seven days after they have undergone orthopaedic surgery for limb fractures.
Zaccardi et al. (2010) Randomisation two groups pre- and posttest	Stress urinary incontinence patients, (n=30)	Preoperative	Experimental group attended two pelvic floor re-education sessions provided by the researche. (n=15)	The control group did not participate in the sessions. (n=15)	Although the effect of pelvic floor re-education on comfort did not reach statistical significance, the clinical significance of the effect size warrants further investigation. The qualitative aspect of the study revealed that the women in the intervention group found the sessions helpful, informative, and worth their time.
Chun-Yan Zhang et al. (2011) Randomisation two groups post-test only	Coronary Artery Bypass Graft surgery patients, (n=40)	Preoperative	The standard preoperative care and counseling course 3 days before the surgery (n=20)	The standard preoperative care and counseling. (n=20)	Nurse-initiated preoperational education and counseling were associated with a reduced rate of perioperative complications and a reduced level of anxiety following Coronary Artery Bypass Graft surgery.
Guo et al. (2012) Randomisation two groups pre- and posttest	Cardiac surgery patients, (n=153)	Preoperative	The information leaflet with simple texts and diagrams handy for quick reference. (n=70)	Unstructured verbal information only about the surgery and anesthesia. (n=83)	This form of preoperative education is effective in reducing anxiety and depression. Based upon existing evidence and international practice, preoperative education should be incorporated into routine practice to prepare Chinese cardiac patients for surgery.

TABLE 2: Details of postoperative studies

Study and design description	Population	Time	Experimental intervention	Control intervention	Conclusion
Hartford et al. (2002) Randomisation two groups pre- and posttest	Coronary artery surgery patients, (n=131)	Postoperative	Standardised discharge information. Intensive telephone follow-up calls and 24-h toll free number. (n=63)	Usual discharge information at hospital, no systematic follow-up. (n=68)	Intervention effect is in the early period after discharge the time most affected by reduced lengths of stay.
Glindvad and Jorgensen (2007) Randomisation two groups pre- and posttest	Inguinal hernia patients, (n=216)	Postoperative	Received education on discharge from hospital, followed by a telephone interview on the second postoperative day. (n=96)	Was given the usual routine information. (n=120)	In patients operated on for inguinal hernia, postoperative education and a telephone interview have no effect on postoperative pain while resting and time to return to work. The effect on pain while moving was slight. There is no reason to change standard practice.
Huang and Yu (2007) Randomisation two groups pre- and posttest	Renal transplantation patients, (n=124)	Postoperative	Gained an intervention study of healthy-educating based on the normal nursing. (n=62)	Received normal nursing. (n=62)	Systematic and standard healthy education can make the patients master the elementary knowledge of the renal transplantation, enhance the drug compliance of the patients, and conduce to improve the quality of life.
Reynolds (2009) Randomisation two groups pre- and posttest	Discharged postoperative patients, (n=146)	Postoperative	87 patients completed a pretest knowledge and experience questionnaire. One week after discharge, 68 patients returned and completed a post-test knowledge and experience questionnaire. (n=87)	Patients completed a pretest knowledge and experience questionnaire and received the usual standards of care. (n=59)	No statistically significant difference between the groups regarding knowledge and experience about pain, postoperative pain, and interference of pain with activities of daily living 1 week after discharge, those that received the intervention had lower pain scores and less interference of pain with activities.

for patients in surgical process. Patient education with DVD, education booklet , watching video counseling, telephone/special educational session, verbal information, internet based education were found useful interms of postoperative condition, pain, anxiety, activity, morbidity, length of stay, patient satisfaction.[3,6,31,33-35,37-39,41,42,45,46,52] But some studies showed that patient education with education booklet and telephone educational session were found ineffective (Figure 3).[32,43,51]

OUTCOMES AND THE MOST EFFECTIVE INTERVENTIONS

Analysis of outcomes focused on statistically significant findings. Most of the interventions reported positive effects. Although there are more than positive effects, there was not a statistical relationship between periods and effects of outcomes ($p=0.55$, $p>0.05$).

According to the studies there could not found special educational method for patient education. Generally, these studies showed that educational method used is more effective than standart care.

DISCUSSION

Patient education is one of beneficial empowerment method for surgical patients. There are only a few studies that describe empowering methods that can be used in nursing to develop effective patient empowering relationships with nurses.[20,47-49] The studies reveal that teaching surgical patients is often seen as producing and delivering a standardised package. The patient education should be specific for what their needs and the patient join the education process for empowering themselves. There is a

TABLE 3: Details both of preoperative and postoperative studies.

Study and design description	Population	Time	Experimental intervention	Control intervention	Conclusion
Ip (2004) Randomisation two groups	A transurethal resection of prostate or radical prostatectomy patients, (n=16)	Preoperative and Postoperative	Received the magnet about the same information. (n=9)	Received a paper copy of the same information. (n=7)	Both the magnet and follow up phone call had a significant impact on the patients who received both, despite the small sample size, and contributed to a reported decrease incontinence postoperatively. The magnet is now distributed widely and is printend in chinese language as well.
Ratner et al. (2004) Randomisation two groups pre- and posttest	Elective surgery patients, (n=237)	Preoperative and Postoperative	Pre-admission clinic 15 min counselling from traine d research nurse, materials, nicotine gum, quit kit, hotline number. Post-operative counselling in hospital: follow-up calls over 16 wks. (n=117)	Usual care. (n=120)	Encouraging patients to fast from smoking before surgery and postoperative support are efficacious ways to reduce preoperative and immediate postoperative tobacco use.
Blay and Donoghue (2005) Randomisation two groups	Elective laparoscopic cholecystectomy patients, (n=93)	Preoperative and Postoperative	Education intervention participants were provided with verbal and written information on pain management, wound care, diet and elimination. (n=41)	Standart pre-admission procedure. (n=52)	Pre-admission education intervention helps reduse post-operative pain levels following laparoscopic cholecystectomy and significantly increases patients' knowledge of self-care and complication management.
Heikkinen et al. (2008) Randomisation two groups pre- and posttest	Elective ambulatory orthopaedic surgery patients, (n=147)	Preoperative and Postoperative	Receiving Internet-based education. (n=72)	Receiving face-to-face education with a nurse. (n = 75)	Improvements in the patients' level and sufficiency of knowledge within both groups indicate an increase in patients' cognitive empowerment.

need for controlled studies, which examine the dynamic nature of individualised information provision, patient learning and the outcomes of the interventions.[50] In this study, the education of surgical patients in terms of content and method for surgical patients and the necessity of developing a positive effect on patient education process has revealed that the patient's surgery.

Most of the interventions reviewed for this study were implemented at the preoperative stage of patient care; only small minorities focused on postoperative care and were carried out after discharge. As most measurements in these studies were based upon questionnaires developed by the authors themselves, it was difficult to compare the interventions and their outcomes with each other. For reasons of comparability, it would be important to use well-established and validated instruments.

Surgical patients invariably go through many stressful periods during their care, giving rise to much anxiety and fears.[2] In addition, previous studies have shown that patient education can have positive effects in this regards. Other measures used in these studies related to cognitive, functional, biophysiological and experiential outcomes, while social and ethical aspects of education were not measured at all.

There are 13 preoperative, four postoperative, four pre and post operative interventions. The outcomes of interventions varied quite widely. Most of the interventions (81%) reported positive effects, and four studies (19%) showed negative effects.

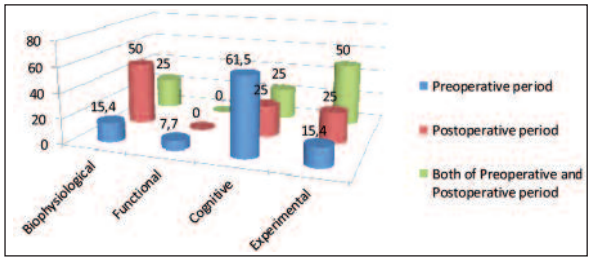

FIGURE 2: Percentages of measures in the subgroup of aspects of empowerment.

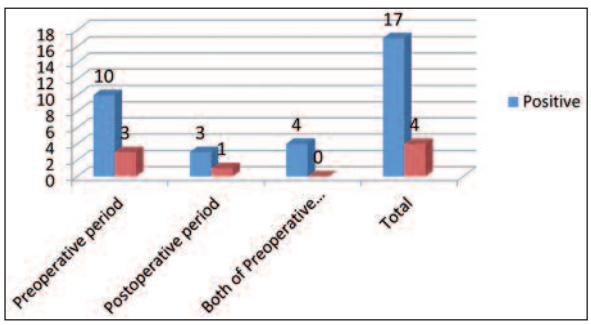

FIGURE 3: Numbers of positive and negative effective studies by periods of surgical patient education.

RELIABILITY, VALIDITY AND LIMITATIONS

The review carried out for this study was a collaborative effort. All the search strategies and the inclusion and exclusion criteria employed are described in this report and the same articles are available to any other reviewers. The search was limited to Cochrane Library, PubMed, Science Direct, Cambridge, and Proquest Medical and Health Package Wiley Interscience because these databases contain a lot of health care related and experimental studies.

The studies drawn from the all search were limited to randomised controlled trials. This decision was motivated by the fact that systematic reviews are usually aim at identifying evidence regarding effectiveness and focuses principally on randomised controlled trials. All the studies included in this review are included in Cochrane Library, PubMed, Science Direct, Cambridge, and Proquest Medical and Health Package Wiley Interscience as randomised controlled trials. The experimental group and the control group in all studies were analyzed studies.

The search was limited to English-language studies concerning surgical patient education in general. Therefore, it is possible that not all surgical areas are covered in this review. However, the keywords, 'nursing', 'pre-operative', 'postoperative', 'surgical' and 'patient education' were confirmed in that the aim of the review was to explore patient education in surgical nursing in general.

IMPLICATIONS FOR NURSING PRACTICE, EDUCATION AND RESEARCH

This review clearly highlights the need to develop patient education interventions for surgical patients. Surgical patient education needs to show a more innovative approach and pay more attention to the individual patient's situation.

Furthermore, we ought to devote greater attention to empowerment by education, because the recent tendency towards ever shorter hospital stays and the scarcity of nursing resources mean that patients have to assume ever greater responsibility for their own care.

Patient education should be effective and focused on patients' own resources and needs. For purposes of effective patient education it is imperative to invest greater effort in systematic planning, implementation and evaluation of patient education.

The content of patient education should be more carefully designed in systematic planning, implementation and evaluation of patient education. Patient education is not about controlling and supervising patients, but even so it should be systematic and well reported. In addition, research results ought to be discussed and applied in the practice of nursing on an everyday basis. These findings are also important for education from the point of view of research and practice. Nursing education should clearly make better use of the research evidence that has been accumulated. It should also give more attention to the meaning of patient education as an empowering activity. As far as nursing research is concerned, this review has made clear the need to develop patient education studies for surgical patients both in terms of their content and methods. In addition, the development of standardised outcome measurement instrument for surgical patient education would be a benefit. Strong research designs - randomised controlled trials- are required in order that effects can be demonstrated. In addition, the planning and im-

plementation of these randomised controlled trials will require closer attention.[2,16,24]

The study was limitted from 2002 to 2012 years. We recommended carrying out more systematic review is to assess the interventions fulfilled in surgical patient education and to explore the outcomes of experimentally designed studies after 2012.

CONCLUSIONS

The findings suggest that more research should be undertaken to establish, in more detail, the elements that make up a surgical patient education and their uses. Information to surgical patients appears to have an empowering effect, enabling them to take more control over their health care, and to comply with medical treatment. The results of this review confirm that information, which is spesific to individual patient needs, has a significant role for surgical patients.

RELEVANCE TO CLINICAL PRACTICE

These findings show that surgical patient education in both preoperative and postoperative period is useful in delivering positive patient outcomes. It should also give more attention to the meaning of patient education as an empowering activity.

REFERENCES

1. Johansson K, Leino-Kilpi H, Salanterä S, Lehtikunnas T, Ahonen P, Elomaa L, et al. Need for change in patient education: a Finnish survey from the patient's perspective. Patient Educ Couns 2003;51(3):239-45.
2. Johansson K, Salanterä S, Heikkinen K, Kuusisto A, Virtanen H, Leino-Kilpi H. Surgical patient education: assessing the interventions and exploring the outcomes from experimental and quasiexperimental studies from 1990 to 2003. Clin Effect Nurs 2004;8(2):81-92.
3. Blay N, Donoghue J. The effect of pre-admission education on domiciliary recovery following laparoscopic cholecystectomy. Aust J Adv Nurs 2005;22(4):14-9.
4. Suhonen R, Välimäki M, Leino-Kilpi H. A review of outcomes of individualised nursing interventions on adult patients. J Clin Nurs 2008;17(7):843-60.
5. Adams RJ. Improving health outcomes with better patient understanding and education. Risk Manag Healthc Policy 2010;3:61-72.
6. Johansson K, Katajisto J, Salanterä S. Pre-admission education in surgical rheumatology nursing: towards greater patient empowerment. J Clin Nurs 2010;19(21-22):2980-8.
7. Xu P. Using teach-back for patient education and self-management. Am Nurse Today 2012;7(3):83-90.
8. Youngblut JM, Brooten D. Evidence-based nursing practice: why is it important? AACN Clin Issues 2001;12(4):468-76.
9. Gammon J, Mulholland CW. Effect of preparatory information prior to elective total hip replacement on psychological coping outcomes. J Adv Nurs 1996;24(2):303-8.
10. Chelf JH, Agre P, Axelrod A, Cheney L, Cole DD, Condrad K, et al. Cancer-related patient education: an overview of the last decade of evaluation and research. Oncol Nurs Forum 2001;28(7):1139-47.
11. McAllister J. An overview of the current asthma disease management guidance. Br J Nurs 2004;13(9):512-7.
12. OECD Health Data 2003. Available from: <http://www.oecd.org> retrieved 14th January 2004. Kaynak online, çıkarılmalı.
13. Coslow BI, Eddy ME. Effects of preoperative ambulatory gynecological education: clinical outcomes and patient satisfaction. J Perianesth Nurs 1998;13(1):4-10.
14. Breemhaar B, van den Borne HW, Mullen PD. Inadequacies of surgical patient education. Patient Educ Couns 1996;28(31):31-44.
15. Moore K, Estey A. The early post-operative concerns of men after radical prostatectomy. J Adv Nurs 1999;29(5):1121-9.
16. Johansson K, Hupli M, Salantera S. Patients' learning needs after hip arthroplasty. J Clin Nurs 2002;11(5):634-9.
17. Wong J, Wong S. A randomized controlled trial of a new approach to preoperative teaching and patient compliance. Int J Nurs Stud 1985;22(2):105-15.
18. Ratanalert S, Soontrapornchai P, Ovartlarnporn B. Preoperative education improves quality of patient care for endoscopic retrograde cholangiopancreatography. Gastroenterol Nurs 2003;26(1):21-5.
19. Suhonen R, Välimäki M, Leino-Kilpi H, Katajisto J. Testing the individualized care model. Scand J Caring Sci 2004;18(1):27-36.
20. Virtanen H, Leino- Kilpi H, Salanterä S. Empowering discourse in patient education. Patient Educ Couns 2007;66(2):140-6.
21. Feste C, Anderson RM. Empowerment: from philosophy to practice. Patient Educ Couns 1995;26(1-3):139-44.
22. Keers J, Bouma J, Links T, ter Maaten J, Gans R, Wolffenbuttel B, et al. One-year follow-up effects of diabetes rehabilitaion for patients with prolonged self-management difficulties. Patient Educ Couns 2006;60(1):16-23.
23. Shuldham C. A review of the impact of pre-operative education on recovery from surgery. Int J Nurs Stud 1999;36(2):171-7.
24. Shuldham C. Pre-operative education--a review of the research design. Int J Nurs Stud 1999;36(2):179-87.
25. Shuldham CM. Pre-operative education for the patient having coronary artery bypass surgery. Patient Educ Couns 2001;43(2):129-37.
26. Leinonen T, Leino-Kilpi H. Research in peri-operative nursing care. J Clin Nurs 1999;8(2):123-38.
27. Hathaway D. Effect of preoperative instruction on postoperative outcomes: a meta-analysis. Nurs Res 1986;35(5):269-75.
28. Devine EC. Effects of psychoeducational care for adult surgical patients: a meta-analysis of 191 studies. Patient Educ Couns 1992;19(2):129-42.
29. Polit DF, Hungler BP. Introduction to Nursing Research in an Evidence-Based Practice Environment. Nursing Research: Principles and Methods. 5th ed. Philadelphia, USA: JB Lippincott; 1995. p.3-22.
30. Burns N, Grove SK. Discovering the World Nursing Research. The Practice of Nursing Research. 3rd ed. Philadelphia: WB Saunders Company; 1997. p.1-11.
31. Lewis C, Gunta K, Wong D. Patient knowledge, behavior, and satisfaction with the use of a preoperative DVD. Orthop Nurs 2002;21(6):41-3, 45-9.
32. Watt-Watson J, Stevens B, Katz J, Costello J, Reid GJ, David T. Impact of preoperative education on pain outcomes after coronary artery bypass graft surgery. Pain 2004;109(1-2):73-85.
33. Chumbley GM, Ward L, Hall GM, Salmon P. Pre-operative information and patient-controlled analgesia: much ado about nothing. Anaesthesia 2004;59(4):354-8.
34. Pearson S, Maddern GJ, Hewett P. Interacting effects of preoperative information and patient choice in adaptation to colonoscopy. Dis Colon Rectum 2005;48(11): 2047-54.
35. Deyirmenjian M, Karam N, Salameh P. Preoperative patient education for open-heart patients: a source of anxiety? Patient Educ Couns 2006;62(1):111-7.
36. Wong EM, Chan SW, Chair SY. The effect of educational intervention on pain beliefs and postoperative pain relief among Chinese patients with fractured limbs. J Clin Nurs 2010;19(17-18):2652-5.
37. Zaccardi JE, Wilson L, Mokrzycki ML. The effect of pelvic floor re-education on comfort in women having surgery for stress urinary incontinence. Urol Nurs 2010;30(2):137-46.
38. Zhang CY, Jiang Y, Yin QY, Chen FJ, Ma LL, Wang LX. Impact of nurse-initiated preoperative education on postoperative anxiety symptoms and complications after coronary artery bypass grafting. J Cardiovasc Nurs 2012;27(1):84-8.
39. Guo P, East L, Arthur A. A preoperative education intervention to reduce anxiety and improve recovery among Chinese cardiac patients: a randomized controlled trial. Int J Nurs Stud 2011;49(2):129-37.
40. Møller AM, Villebro N, Pedersen T, Tønnesen H. Effect of preoperative smoking intervention on postoperative complications: a randomized clinical trial. Lancet 2002;359(9301):114-7.