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A Review of the Benefit of Pre-Operative Education
Prior to Coronary Artery Bypass Grafting.

Patrick C. Jahn BS, RN

An Independent Study Submitted to the Graduate Faculty
of the
University of North Dakota
In partial fulfillment of the requirements for the degree of
Master of Science

Grand Forks, North Dakota

April, 2012

PERMISSION

Title A Review of the Benefit of Pre-operative Education
Department Nursing
Degree Master of Science

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Abstract

Coronary Artery Bypass Graft surgery is the most common type of heart surgery performed each year in the United States (U.S. Department of HHS, 2010). If your healthcare provider were to tell you that you needed heart surgery what would be the first thing to come to mind, would it be fear, pain, anxiety, denial? Do you have any idea what this procedure entails or what to expect before, during, or after your hospitalization?

Preparation is most often a prerequisite for success. Multiple research studies have shown that proper patient preparation can lead to better patient outcomes, including pain and anxiety reduction, cost savings, reduced mortality and morbidity, as well as greater staff satisfaction. Too often patients are inundated with dozens of pages of information and booklets regarding surgery that they become too overwhelmed to even know where to begin. The purpose of this literature review is to identify the potential benefit(s) of a simplified and concise pre-operative patient education brochure or pamphlet prior to Coronary Artery Bypass Grafting (CABG) surgery. The main search engines used included PubMed, CINAHL, SCOPUS, and Google Scholar. If literature shows that properly educated patients display better post operative outcomes in terms of anxiety reduction, pain control, and reduced readmission rates, it would seem prudent that for optimal patient outcomes, hospitals and more explicitly surgical departments within the hospitals integrate a tool such as this.

Key Words: pre-operative education, Coronary Artery Bypass Grafting (CABG), pre-operative anxiety, formal patient education, cardiac surgery education, hospital readmission after cardiac surgery, readmission rates.

factor that has a great effect on an individual's recovery is pain. Pain has significant negative effects on breathing, eating, movement, perfusion, emotions, and wound healing. While setting a goal of no pain after surgery is not realistic, teaching patients the different methods to control, express, and minimize their pain is beneficial to healing. This paper will attempt to identify documented benefits of patient education about these factors prior to CABG surgery.

Purpose

This independent study project will provide a review of current literature related to the benefits of pre-operative education prior to CABG surgery as well as propose an educational tool for use in a clinical setting. Benefits to pre-operative education include: better postoperative pain control, a reduction in patient and care giver anxiety and a decrease in hospital readmissions related to postoperative complications.

Significance

This project has the potential to have an impact on several different fronts. Properly preparing patients and caregivers prior to surgery provides better patient outcomes in terms of pain control, patient satisfaction, anxiety reduction, and also length of hospital stay (Sjoling, Nordahl, Olofsson, & Asplund, 2003). Beyond better patient outcomes there is the potential for increased staff satisfaction directly related to better prepared patients and families. Lastly, there is the potential benefit of cost savings for both patient and institution related to the reduced length of hospital stay and reduced post operative complications.

Currently, a common practice in this author's workplace, a large academic medical center is to attempt to teach patients after their CABG surgery, prior to

discharge. While a review of instructions prior to discharge is definitely a great idea, the attempt to teach someone post operatively who is in pain, using narcotics, suffering from anxiety, fatigue, and dealing with a strange environment full of monitors, lines, tubes, and alarms is a set up for failure. It seems more logical to allow patients to learn in a calm, controlled environment without interruptions or distractions- and at a time when the information will be put to use (i.e. teaching patients about narcotics before they are administered when they stand to benefit the most from the information).

According to Bastable (2006) there are four factors that influence an individual's readiness to learn. They are physical readiness, emotional readiness, experiential readiness, and knowledge readiness. Some variables related to these four factors are non-modifiable such as cultural background, gender, and developmental stage. However the majority of these variables are within our control to change or modify. Environmental and health status are two key factors that can be completely modified by performing teaching prior to surgery. A patient in pain is focusing all their physical and psychic energy into coping with that pain and therefore has little to no energy remaining to focus on learning (Bastable, 2006). While pain can often be controlled with medications, the most common side effect of pain medications is drowsiness. If patients are told not to drive a car while taking narcotics how can we expect them to focus on how to prevent post operative complications such as infections, broken sternal wires, and arrhythmias? Healthcare education is more important today than ever before, so doesn't it seem prudent to provide this education in an environment as conducive to learning as possible?

Theoretical Framework

The theoretical framework used for this project is based on Malcolm Knowles Concepts of Adult Learning. According to Knowles andragogy is the “art and science of helping adults learn” (Purdy, 1997). In developing the modern practice of adult education Knowles created the seven step process of instruction. This process begins with the establishment of a cooperative learning climate, enables the formulation of learning objectives, designs activities for achieving objectives, selects methods for achieving objectives, and concludes with evaluation to ensure the objectives have been met (Knowles, 1970).

Knowles’ theory can be described by using six assumptions of adult learning. These six assumptions can be successfully applied to preparing patients for a major surgical procedure. Knowles’ assumptions are:

- Adults need to know why they need to know something.
- As individuals mature, their self-concept moves from being dependent to being self-directed.
- Adults accumulate a large amount of experience that can create a medium and resource for learning.
- Personal situations can create a readiness to learn in the adult individual.
- Adult’s perspectives of time change from that of postponing application of their knowledge to the immediacy of the application.
- Adults are primarily motivated by a desire to solve immediate and practical problems.

(McEwen & Wills, 2011, p. 364)

These assumptions can all be satisfied with proper education and preparation prior to surgery. Being told that one needs heart surgery creates a significant readiness to learn in a normal, mature adult. Conducting this educational session in proximity to the procedure allows for the relative immediate application of the knowledge acquired. The last assumption of adults being motivated to solve immediate and practical problems should strengthen their desire to arm themselves with the necessary information to solve, or at a minimum decrease their anxiety and pain before, during, and after their hospitalization. The successful use of pre-operative education will allow for all of Malcolm Knowles adult learning assumptions to be met and the patients to be properly prepared to have the best possible outcomes from both their surgery and hospitalization.

Process

This literature review began with database searches of several different search engines including CINAHL, Google Scholar, Scopus, Science Direct, and Cochrane Library. Keywords used in the search included pre-operative education, pre-operative teaching, coronary artery bypass education, patient education, heart surgery education, readmission rates. Throughout the process Google scholar, Scopus, and Science Direct seemed to be the most fruitful search engines. While using the search engines and references from articles, a large amount of relatively aged data was discovered. Due to the rapid pace of medical advancements, namely surgical advancements, and also the drastic change in information dissemination with today's technology, limits such as, English language, and articles within the last 15 years were used. A total of 15 studies were reviewed and for this project. A table of studies reviewed for this project is included in appendix A.

Review of the Literature

While there was mixed results in the studies reviewed, a solid majority of the research suggests that pre-operative education has a positive influence on anxiety, pain, and patient satisfaction. In addition based on personal experience, discussions with several colleagues in the cardiac surgery department including Nurse Practitioners (NP), Physician Assistants (PA), Medical Doctors (MD), and Registered Nurses (RN), as well as shadowing NPs and MDs during their pre-operative visits with the patients, it became quite evident that a majority of the patients who arrive for surgery lack even the very basic knowledge of the planned course of action before, during, and after their procedure, and could benefit greatly from a pre-operative educational session.

A plethora of research involving cardiovascular surgery exists, and the advancements and changes that have occurred over the past years are nothing short of marvelous. As it seems with perhaps all medical procedures the goal always seems to be to achieve the best outcome for the patient in the safest manner and shortest amount of time. Heart surgery is no different with newer techniques such as 'off-pump' surgeries, rapid-recovery, robotic assisted minimally invasive surgeries, and transthoracic and femoral access procedures to name only a few of the more recent advancements. What about the patients? Are there advancements or improvements in the way we prepare patients before surgery that can improve their post-operative outcomes?

Lack of information has been found to be a common complaint of hospitalized surgical patients (Webber, 1990). A meta-analysis of 68 studies by Hathaway looked at the effect of pre-operative education on postoperative outcomes and showed a 20% improvement in postoperative outcomes when effective pre-operative education had

occurred (1986). In a more recent study from the *European Journal of Cardio-thoracic Surgery*, 72% of study participants wanted detailed information regarding their surgery as well as potential complications (Ivarsson, Larsson, Luhrs, & Sjoberg, 2005). It was also reported that patients who received detailed pre-operative information were significantly more satisfied and felt they had greatly benefited from opportunities to discuss these details with their next of kin, as well as their healthcare team (Ivarsoon, et al. 2005).

While the importance of pre-operative education is clear, the research is still patchy regarding the best and most efficient way to deliver this education. This problem has perhaps never been more important as it is in our current economic times when medical costs are continually under scrutiny and analysis. Similar to introducing a new drug without any supportive research or analysis, hospitals are going to be reluctant to introduce a new method of information delivery without some evidence of its efficacy, benefit, and potential for return (Hobbs, 2002).

There are a several studies available that look at pain control after surgery. However the educational interventions that are often tested seem to vary greatly. In a study titled 'Impact of pre-operative education on pain outcomes after coronary artery bypass graft surgery', researchers looked at the differences in post operative pain in those patients who were given a pain booklet to read prior to surgery vs. those who were not given the booklet (Watt-Watson, et al., 2004b). This study provided some key findings but also highlighted some key limitations of this type of educational delivery method. First off the booklet was given to the intervention group but it was not verified that they actually read it. A majority of the participants stated they were too tired, nervous, or anxious to read it. Also the majority of men rated the book as 'not-helpful' while 81% of

women rated the book as 'extremely helpful' highlighting potential preferred learning style between sexes (Watt-Watson et al., 2004).

Another study regarding pain management was conducted by researchers in a large hospital in Sweden. Cardiac surgery patients were separated into two groups. Both groups were given the typical pre-operative instructions with the treatment group being given an additional leaflet containing pain management instructions. Following surgery 100% of participants in the treatment group reported satisfaction with their pain management. (Sjoling, et al., 2003).

What about a formal education pre-operative class? Lepczyk, Ralieg, & Rowley (1990) undertook a study to determine if a benefit existed in conducting a pre-operative class or session. Results from their study surprisingly showed no real benefit in terms of a reduction in patient anxiety levels after attending the session. A second study looking at similar interventions was conducted by Shuldman, Fleming, Goodman, Brompton, and Trust who used a pre-operative session to look for possible reductions in pain, anxiety, length of stay, depression, and overall well being. The studies authors found "that there is no benefit to be gained from a formal educational session" (2002, p 666). One piece of data recovered from this study that defies logic to a certain degree is the fact that in terms of hospital length of stay a Mann-Whitney U statistical analysis test was used which found a significant difference between the two groups length of stay. However contrary to the hypothesis, the difference favored the control group, 9.15 day length of stay vs. the intervention group 10.07 day length of stay (Shuldman et al., 2002). If the data from this study is accurate the hypothesis of this study is rejected and it suggests that pre-operative education actually lengthens a patient's hospital stay. A potential deterrent to

participation in this study was the time commitment required for the intervention. Participants were required to spend an entire day at the hospital something often not feasible to those who have jobs, have to travel, or are too sick for that type of commitment. Another potential factor that may have influenced the outcomes of this trial is that the interval of time between education and surgery could not be controlled so some participants had gaps between class and surgery of greater than eight months. Recommendations from the authors of this study include the need for further research as well as an education program that takes advantage of technologies such as the internet, DVD's, or other interactive programs that can be done at a distance so as to eliminate the need for extra travel for patients. Several PAs and NPs who work in the cardiac surgery department of this author's work setting, and who see patients pre, intra, and post operatively expressed similar concerns to those mentioned above. They confirm that while a pre-operative class seems like a great idea the logistics of it just do not currently fit into the typical patient's pre-operative course. A typical pre-operative patient can have upwards of 10 or more appointments prior to meeting with the surgeon and PA or NP. Appointments can include electrocardiogram, echocardiogram, cardiologist visit, laboratory tests, angiogram, allergy testing and more. Coordinating a class time that works for multiple patients, having staff available to teach the class, having a space for the class, and coordinating it into a patients schedule is nearly impossible. On top of these factors, with no solid evidence existing that clearly displays the benefits of this type of teaching method there seems to be no logical reason to pursue this.

A study from the *Annals of Internal Medicine* contrasts the findings of the aforementioned studies; however it requires a time commitment that very few patients

would be able to commit to. Using an educational session, exercise classes, and periodic nursing follow-up calls to patients, subjects were found to have a shorter hospital stay, a shorter intensive care stay, and a better quality of life measured up to six months after surgery (Arthur, Daniels, McKelvie, Hirsh, & Rush, 2002). While the data presented with this study could potentially make for attention grabbing headlines, the logistics and commitments needed to produce the results is once again far greater than most would commit to. It does however raise another great question of how to best prepare patients prior to surgery so they have the best chances of successful surgery and recovery. One conclusion drawn from this study, however, is that pre-operative interventions can indeed benefit patients, lead to shorter stays, and also potentially provide cost savings. This is the goal we are pursuing with our intervention.

Pain slows healing in several ways including decreased mobility, decrease in quality of respirations, decreased nutritional intake, and increased physiological and emotional stress. Several studies have reported significant deficiencies in pain control that are often linked to deficiencies in proper patient pain management education. One study by Watt-Watson et al. showed that the majority of CABG patients experience considerable pain, and most would not ask their nurse for analgesics (2000a). In a study by Beggs et al., researchers assessed 300 patients readiness for discharge from six different hospitals by using a survey which addressed ten different areas of care including incision care, medication, activity level, diet, teaching method, recovery, emotions and sleep, and pain control. Pain education was an area the participants listed as an area needing improvement (1998). Further analysis of the data from this study found a positive correlation between length of stay and preparation for activity progression.

Participants were also asked to rate their preferred method of instruction and their perceived effectiveness of the different instruction methods used. The use of written, group, video presentations was rated second behind individual teaching methods. Also worth noting is that elderly patients rated video teaching as significantly less helpful than other methods (Beggs, et al., 1998).

The data from these two studies are particularly beneficial to this project for a number of reasons. First, the project setting uses a plethora of videos, pre, intra, and post hospitalization. Pre-operatively patients are mailed DVD's, while in the hospital they are required to watch up to nine online videos ranging from endocarditis to health eating and ranging in length from six to 25+minutes. Upon hospital discharge patients are provided with more videos to take home. When asking patients about the videos the greater majority say they did not watch the videos for a number of reasons-including but not limited to: fear, anxiety, didn't want to, forgot to, didn't know how, don't have DVD player, and didn't know I was supposed to.

In regards to the pain management education that patients are currently provided, this author discovered that out of components of the videos, booklets, and pamphlets collected for this project, there are a total two and a half pages (out of >125) of information regarding pain management. These pages contain suggestions such as herbal medications-which ironically patients are told not to take during or after their surgery, acupuncture-which is not used on the surgical floor for a number of reasons, meditation, classical music, and breathing techniques, to name a few. The only medication mentioned in any of the education provided to the patient is Advil®. The lack of proper pain management education for patients is glaringly evident. Nowhere is there mention

of medications available such as narcotics, NSAIDS, or patient controlled analgesic pumps. Nor is there mention of a pain goal for patients, how to express their pain, and what options the patient has for managing their pain levels. A majority of these patients are going to be experiencing pain like they never have before and to have them preparing for this thinking their only tools are going to be Beethoven's greatest hits and pursed lip breathing is doing a disservice to these patients and undoubtedly causing increases in apprehension, anxiety and fear.

In addition to the glaring needs discovered from these studies and in the project setting, the Joint Commission an organization that accredits hospitals, recently developed and put into effect 'Pain Management Standards'. These measurable standards assess a facility's compliance with pain management and assessment (The Joint Commission 2012-online). Three main points are highlighted in this standard with one being 'The education of patients and their families about pain management' (The Joint Commission, 2012).

When discussing anxiety it is no secret that it can be detrimental to both physical and mental health. Nelson (2006) reported that stress and anxiety have a detrimental effect on surgical recovery and that effective pre-operative teaching can reduce stress, anxiety, and pain levels. Several studies including the meta-analysis by Hathaway (1986) found that informed patients experience less anxiety, are more easily mobilized, and are overall more satisfied with their care. A reported common contributor to fear and anxiety is lack of knowledge. Nelson's study found startling success rates in regards to reduction of patient anxiety with appropriate education including the use of an educational booklet. All (100%) of the study participants felt that they benefited from the booklet, while 76%

felt that their anxieties had been relieved (2006). Nelson also found that a common request by patients was that health care professionals (doctors and nurses) be the ones conducting the education. This author's experiences on a cardiac surgical floor as a nurse, as well as the time spent seeing patients pre-operatively with the NPs and PAs in order to gather data for this project definitely revealed that anxiety is a large problem for patients and family members. If Nelson's data is correct and anxiety can be reduced via an intervention as simple as a booklet or pamphlet this seems like a necessary intervention that is long overdue. In a more recent study researchers used an information booklet and education session with the hopes of seeing a reduction in pre-operative patient anxiety and an increase in postoperative mobility. Like Nelson's study this data also showed a decrease in anxiety levels between the two groups favoring the intervention group. (Krumholz, et al., 2006).

While we must realize that patients do not need to be turned from novices to experts in pain management in order to survive and have successful hospital stays. But what information do they feel they should know; what is most important to them? Lithner and Zilling (2000) completed a study designed to determine the pre- and postoperative informational needs of patients. Patients participated in filling out a questionnaire of 48 questions divided into seven different categories. These surveys were filled out at time of hospital admission and again at the time of hospital discharge. The questions were created to cover all areas of the surgery/hospitalization. Pain management was the most highly rated item of concern on the survey both at time of admission as well as at time of discharge. This study provides us with some valuable information in relation to patient education because it shows us what information is important to the patient and families.

The authors noted during this study that the hospital staffs (nurses and doctors) time is very limited and these personnel often expressed concern that their time with each patient is not enough to discuss all of the patient's concerns (Lithner & Zilling, 2000). Therefore the data collected here could be used to perhaps tailor patient education to what is rated as most important pre and post operatively. Seven questions were rated as "most important" by over 90% of participants on the admission screening; every one of these questions related to postoperative pain and symptoms (Lithner & Zilling, 2000). Sjoling et al. (2003) conducted a prospective experimental study to look at the effects of pre-operative education on post-operative pain and anxiety. Participants were divided into two equal groups, both groups were given the routine pre-operative information, with the intervention group given an additional leaflet with information focused on encouraging the patients to take an active role in their post-operative by encouraging them to communicate with their nurse when their pain is present or begins to return (2003). They found a significant difference in patient satisfaction between the groups. In the treatment group 100% of patients reported being satisfied or very satisfied with their pain management, while in the control group 87% reported being satisfied, 10% reported being less than satisfied, and 3% reported being dissatisfied. These studies confirm both the need and the benefit of education in helping to reduce pain and anxiety. They also raise the concern that due to time constraints of staff in the postoperative hospital setting that this teaching should ideally be performed prior to surgery.

Now that the need, benefit of, and methods of instruction have been identified, what inadequacies or mistakes have been identified in the research that we can learn from and prevent repeating? Fortunately researchers Breemhaar, van den Borne, & Mullen

through a series of interviews with healthcare professionals and patients, as well as observation of interactions between patients and staff took a look at inadequacies in surgical education (1996). Through their experiment and review of previous research done on this topic they highlighted some key findings. First off they reported that it is optimal if the healthcare professionals are the ones conducting the education, patients report preference in receiving education from their "own doctors and nurses" (Breemhaar, van den Borne, & Mullen, 1996). Secondly they concluded that patient education is considered a crucial component of complete hospital care. Next they reported that patient education is more likely to be continued after hospitalization if given by health care professionals. Lastly they noted previous research performed by Devine & Cook that found successfully applied patient education may cut hospital costs (1986). The key findings from this study were that patients reported 1) Lack of information, 2) Information received did not correlate with the information they desired. 3) Information received during their stay varied greatly. 4) Information given by providers was not well coordinated. 5) Patients reported receiving too much information on the day of admission and too little on the day of discharge. This study provides beneficial data on the quantity of information, quality of information, methods of information delivery, and timing of patient education.

Another benefit to providing patients with appropriate and effective education is the potential reduction it could have on hospital readmission rates. In a study from the *Journal of the American Medical Association* researchers looked at the "Predictors of Readmission for Complications of Coronary Artery Bypass Graft Surgery" and found the overall readmission rate for patients after this type of surgery was approximately 15%.

(Hannan, et al., 2003) In a similar study from the *Journal of Thoracic and Cardiovascular Surgery*, the 30 day readmission rate was found to be 13.5%, with heart failure being the top reason and sternal wound infections being the fourth most common reason (D'Agostino, et al., 1999).

While it could be argued that some readmissions are not preventable, another fair argument is that a lot of them are preventable. The top two causes for readmissions were infections and heart failure (Hannan, et al., 2003). These two complications, often display early signs and symptoms that could and should be taught to patients so that they may be able to recognize them and take prompt action earlier rather than later. Once a sternal infection progresses to the deep tissue or the bone the cost of treatment becomes enormous, the quality of life dwindles and the chances of significant morbidity and mortality elevates significantly. Likewise early onset of heart failure is much more amendable to treatment and therapy compared to when it is prolonged.

An interesting discovery from these studies was that a shorter hospital stay resulted in a lower readmission rate. As mentioned earlier in regards to sternal wounds, prevention is optimal but when not prevented the earlier they are discovered the better. A group of doctors and nurses in Pennsylvania looked at ways to decrease sternal wound infections and found that the average cost to treat a deep sternal wound to be greater than \$81,000, while a superficial sternal wound while still not cheap was approximately \$10,000-these figures are a decade old already and undoubtedly significantly higher today. In addition the average length of stay in the hospital for deep sternal wound infection often exceeds 60+ days and involves several surgeries (Cimochowski, et al. 2001).

In a study that looked at the power of enabling patients through education, a 30% lower readmission rate was noted in the intervention group which received a one hour session with a nurse educator and then a progressively less frequent telephone follow-up by a nurse. In terms of financial figures the cost of readmissions was on average \$7,515.00 higher in the control group compared to the intervention group (Krumholz, et al., 2002). While the authors conclude that this study found similar data to previous studies of this type they feel it does reinforce the concept that education and support that include the patient to be an active participant in their care can pay huge dividends in both patient outcomes as well as hospital cost savings.

Interpretation

This extensive literature review allowed for the identification of several factors regarding patient pre-operative education. The main factors identified will be discussed here as well as how best to implement them.

First off lack of information is a major concern amongst patients who are preparing for surgery. Several of the studies reviewed cite lack of information as a major complaint as well as having negative effects on patient outcomes during hospitalization. It was also found that too much information can also be a problem as patients report feeling overwhelmed with videos, booklets, cd's, and pamphlets. In the studies where appropriate amounts of appropriate information were used, the effect on patient satisfaction was almost universally positive. Studies also reported almost universal decreases in pain and anxiety when appropriate educational interventions were successfully applied.

A second finding in this review (and one that was definitely not predicted) was data that showed no positive effects of a formal pre-operative class and in some cases even showed a negative impact on patient outcomes. To predict that a sit down formal educational class would have a negative impact on a patients hospital outcome is not easily fathomable but is what the data showed in one study and showed no improvement or worsening in a second study. Mailing educational materials out to patients prior to surgery also appeared to provide no benefit. With patients often not opening or reading the material, being overwhelmed by the sheer amount of material, or not be interested in looking at it for a number of different reasons. Researchers found that patients prefer and are more successful when they are provided one on one education in a controlled environment. Videos provided in the hospital room often end up serving as more of a sleep aid then of an opportunity for learning, as patients are tired, in pain, distracted, or too anxious to focus.

Third, the type of information patients request seemed to be consistent among studies; with information regarding pain, anxiety, and post-operative care being consistently ranked at the tops of patient's lists. In a review of the current booklets given to patients, pain and anxiety control are two areas where information is severely lacking. Two of the booklets reviewed ranged from 61 to >200 pages and information regarding these two important topics seemed both sparse and inadequate at best.

Last, it was discussed in a couple of the reviewed studies that reductions in pain, anxiety, and hospital length of stay have both positive impacts on patient outcomes as well as have the potential to provide significant cost savings. The return on investment of

education to cost savings has the potential to be enormous when comparing the cost of staff time pre-operatively vs. the cost of extended and repeated hospitalizations.

These findings clearly acknowledge that the current system of education has flaws and there is room for improvement; with one possible solution being a simple, concise, and pertinent patient educational brochure. A brochure that covers the topics which are most important to patients such as pain control, anxiety, complications, and discharge. An easily referenced, easy to read guide to CABG surgery that can serve as a analgesic, anxiolytic, and reference guide to help patients and family through this very stressful time. An example of such a tool is included on the following pages.

MOST COMMON SURGICAL COMPLICATIONS

- **Atrial Fibrillation:** fast irregular heart rate. Occurs in approx. 25-30% of surgical patients. Treated with medications. Can cause light headedness, low blood pressure, flutter feeling in chest, syncope.
- **Infection:** most commonly occurs at incision sites (chest, legs, arms, IV sites). Treated with antibiotics. Help to prevent these by performing good hand washing, daily showers that include good incision care, and not touching incisions.
- **Respiratory:** often times during surgery the lung(s) is partially collapsed, expanding them is important to prevent pneumonia and other complications. The best way to do this is through regular use of the breathing device that will be issued to you, and activity.
- **Confusion:** usually as a result of medications, anesthesia, and new surroundings. Improves with time. Often times a family member can stay with their confused loved one to decrease their anxiety and comfort them during this period.

YOUR DAILY TASKS/EXPECTATIONS WHILE IN THE HOSPITAL:

- Sitting in chair for every meal.
- Keep legs elevated when sitting.
- Walk a minimum of 4-6 times per day. (with staff or family)
- Shower. (with help from staff)
- Begin/continue with discharge preparation. (education, destination/transportation, rehab, etc.)

FREQUENTLY ASKED QUESTIONS

Q. What restrictions will I have when I leave the hospital?

A. No lifting greater than 10 lbs for 6 weeks.

Q. When should I see my doctor?

A. It is recommended that you see your doctor within 7-10 days after hospital discharge.

Q. Do I need to be on a special diet?

A. No, but you should try to eat a low fat, low cholesterol, heart-healthy diet. Most people will have a decreased appetite for several weeks after surgery, so eating smaller, more frequent meals may help.

Q. I have heard of people getting depressed after surgery, how will I know if this happens to me?

A. Depression is common after surgery. Some signs that you may be suffering from depression include: sadness, irritability, anxiety, loss of interest or pleasure, feeling helpless, fatigue, thought of death. If you notice any of these symptoms, please see your health care provider. Know that these are very common after surgery and hospitalization.

Q. Do I need to keep a bandage on my incision?

A. No, leave your incision uncovered. Wash it daily with antibacterial soap and water. Monitor it for increased redness, drainage, swelling, or increased pain. If you notice any of these symptoms please notify your healthcare provider. Also, practice good hand washing!

Friendly Reminders:

- Do not get out of bed without hospital staff to assist you.
- Write down questions as they arise so you can be sure to have them addressed before dismissal.

Open Heart Surgery

WHAT YOU NEED TO KNOW

More than 500,000 people undergo heart surgery in the United States annually for a multitude of different reasons.

This brochure is meant to provide you with some key basic information to help guide and speed your recovery.

PRE-OPERATIVE INFORMATION:

- Follow fasting instructions given to you.
- Follow bathing instructions given to you and use the special soap provided by the hospital.
- Discuss with your healthcare provider which medications to take prior to surgery. (i.e. diabetes medications, blood thinners, blood pressure pills, etc.)
- Know when and where to report at the hospital.
- Discuss all of your concerns/questions with your surgeon and his/her staff prior to surgery.
- Complete advanced directives.
- Ensure you have a clear understanding of your reason for needing surgery, the expectations of surgery, other alternatives to surgery, the risks of surgery, who is involved in your surgery.
- Remove all jewelry, piercings, and valuables and leave at home or with a loved one.
- Be sure to review your allergies with the hospital staff and also discuss any prior surgeries you have had.
- Do not take any of your own medications while in the hospital!

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- **Confusion:** usually as a result of medications, anesthesia, and new surroundings. Improves with time. Often times a family member can stay with their confused loved one to decrease their anxiety and comfort them during this period.

YOUR DAILY TASKS/EXPECTATIONS WHILE IN THE HOSPITAL:

- Sitting in chair for every meal.
- Keep legs elevated when sitting.
- Walk a minimum of 4-6 times per day. (with staff or family)
- Shower. (with help from staff)
- Begin/continue with discharge preparation. (education, destination/transportation, rehab, etc.)

FREQUENTLY ASKED QUESTIONS

Q. What restrictions will I have when I leave the hospital?

A. No lifting greater than 10 lbs for 6 weeks.

Q. When should I see my doctor?

A. It is recommended that you see your doctor within 7-10 days after hospital discharge.

Q. Do I need to be on a special diet?

A. No, but you should try to eat a low fat, low cholesterol, heart-healthy diet. Most people will have a decreased appetite for several weeks after surgery, so eating smaller, more frequent meals may help.

Q. I have heard of people getting depressed after surgery, how will I know if this happens to me?

A. Depression is common after surgery. Some signs that you may be suffering from depression include: sadness, irritability, anxiety, loss of interest or pleasure, feeling helpless, fatigue, thought of death. If you notice any of these symptoms, please see your health care provider. Know that these are very common after surgery and hospitalization.

Q. Do I need to keep a bandage on my incision?

A. No, leave your incision uncovered. Wash it daily with antibacterial soap and water. Monitor it for increased redness, drainage, swelling, or increased pain. If you notice any of these symptoms please notify your healthcare provider. Also, practice good hand washing!

Friendly Reminders:

- Do not get out of bed without hospital staff to assist you.
- Write down questions as they arise so you can be sure to have them addressed before dismissal.

Open Heart Surgery

WHAT YOU NEED TO KNOW

More than 500,000 people undergo heart surgery in the United States annually for a multitude of different reasons.

This brochure is meant to provide you with some key basic information to help guide and speed your recovery.

PRE-OPERATIVE INFORMATION:

- Follow fasting instructions given to you.
- Follow bathing instructions given to you and use the special soap provided by the hospital.
- Discuss with your healthcare provider which medications to take prior to surgery. (i.e. diabetes medications, blood thinners, blood pressure pills, etc.)
- Know when and where to report at the hospital.
- Discuss all of your concerns/questions with your surgeon and his/her staff prior to surgery.
- Complete advanced directives.
- Ensure you have a clear understanding of your reason for needing surgery, the expectations of surgery, other alternatives to surgery, the risks of surgery, who is involved in your surgery.
- Remove all jewelry, piercings, and valuables and leave at home or with a loved one.
- Be sure to review your allergies with the hospital staff and also discuss any prior surgeries you have had.
- Do not take any of your own medications while in the hospital!

Discussions and Implications for Nursing

Practice

The findings of the studies reviewed indicate there is a gap not in the quantity, but in the quality, and the delivery of pre-operative education in regards to cardiac surgery. Many of the studies looked at identified areas of strength as well as areas of weakness and ineffectiveness. By pulling together the aspects of pre-operative education that seem to be successful and preferred by patients and eliminating the non-beneficial methods, nurses can at a very minimal cost have a very significant effect on patients, hospitals, families, and staff. Better pain and anxiety control amongst patients and families improves the quality of life of everyone including staff members immensely. If this comes at the cost of a few printed pages of paper and a few minutes out of the provider's or nurse's day, that is a bargain we would all likely take.

Research

While the research in general provided an overwhelming support for pre-operative education, fine tuning a specific brochure and the information to be contained in it will take some trial and error. Obviously pain and anxiety management will be two of the bigger areas of the pamphlet. Other areas that will be important will include care upon discharge, preventing complications, and who to contact should there be any questions after leaving the hospital. The brochure example included in this paper provides a good starting point but will undoubtedly require editing as a result of feedback from patients and staff. One study which supports this type of teaching tool is a study mentioned earlier by Knowles, et al. a similar teaching method was used in the form of a leaflet.

This study measured pain, anxiety, and patient satisfaction with pain management. Data revealed the treatment group having a statistically significant lower state of anxiety, an increase in patient satisfaction, and an increase in pain management (2003).

Education

Patient education should be a pre-requisite for heart surgery. This is a major procedure that will require significant life changing behaviors afterwards. With the continuing drive for hospitals to cut costs and increase efficiency, preparing patients for this event should be a very strong recommendation. The focus of this project was on reduction of pain and anxiety through education, and the review of literature showed that this is both important and possible. Beyond the reduction of pain and anxiety, patients stand to benefit greatly from other knowledge acquired regarding other aspects of their care both in the hospital and post hospitalization.

In regards to preparing staff to implement pre-operative education the only foreseeable investment would be a small amount of time. The staff is all very familiar with CABG surgery and what it takes to get through it and have a successful recovery.

Policy

In terms of healthcare policy this topic needs further study using specific methods of instruction. If a predominant form of education could be identified that proved its effectiveness, pre-operative education could be something that influences healthcare policies in the future. If data prove that pre-operative education did in fact shorten hospital stays or lessen post operative complications such as infections and pneumonia and thus save tremendous amounts of money, hospitals, insurers and medical

reimbursement agencies could easily require all patients attend or participate in an educational session.

Results

Due to the size of the facility where this project took place, the implementation of a new piece of patient education is a very lengthy and detailed process. The informational brochure was first presented to staff nurses who worked on the CV surgery floor, their years of CV surgery experience ranged from two to 28 years, with one of the staff members actually having gone through open heart surgery themselves. A total of eight staff RN's looked at the brochure and provided feedback that they felt would be helpful. These changes include verbiage changes, making the flow of the brochure match the flow of a typical surgery. Also the creation of a concise section with daily expectations for patients was felt by the staff to be beneficial for both themselves and the patients. Once edited, the brochure was then presented to the manager of the CV surgery progressive care unit (PCU), the Nursing Education Specialist (NES), and two of the providers responsible for pre and post operative patient care for further analysis. A few additional changes were made to the brochure-including the elimination of a few items and exchanging a few medical terms with more easily deciphered common lay terms, with the goal of keeping the brochure at approximately a 6th grade reading level. At present, there are plans to present the brochure at a future CV surgery division meeting to identify if it is indeed a feasible, acceptable, and potentially valuable resource for patients to use.

Summary/Conclusions

In conclusion pre-operative education provides a topic of great debate for a few reasons. It has been applied with great success in many settings and it has also been

applied with questionable success for several reasons. Some of these reasons include: financial limitations, patient compliance issues, ineffective teaching tools selected, time constraints, and hospital staffing problems. To those healthcare providers who see the benefit of patient education, pre-operative teaching should be a requirement. Prior to operating ones blender it is recommended you read the manual that accompanies it that is multiple pages long. So it seems logical that prior to a complex and lengthy operation and recovery you at least minimally prepare yourself, to allow for the best possible chance of a positive outcome.

Healthcare costs are rising at a pace that cannot be sustained and still be practical cost effective changes need to start happening. Education is one of the available tools that can help us start. Pre-operative education is only one of many different avenues where a little bit of teaching can have tremendous impact not only on quality of life but also on our healthcare and personal finances. Often times, as discovered through this literature review, the intervention does not have to be elaborate, expensive or fancy. It can be a simple, basic, easy to follow piece of paper that contains pertinent information that is the key to patients' success.

With both pre-operative and general patient education (regardless of the topic) it is important for the teachers to emphasize that patients/students, take responsibility for their health and approach their situation with the seriousness, responsibility, and good decision making that it requires. Quality pre-operative education provides the tools for patients to do just that. When the healthcare team and patients work together with mutual respect and decision making, both can experience tremendous success and enjoyment.

References

- Arthur, H.M., Daniels, C., McKelive, R., Hirsh, J., & Rush, B. (2000). Effect of a Pre-operative Intervention on Pre-operative and Postoperative Outcomes in Low-Risk Patients Awaiting Elective Coronary Artery Bypass Graft Surgery. *Annals of Internal Medicine*, 133:253-262.
- Bastable, S.B. (2006). *Essentials of Patient Education*. Sudbury, MA: Jones and Bartlett Publishers.
- Beggs, V., Willis, S., Maislen, E., Stoks, T., White, D., Sanford, M. Downs, C. (1998) Patient education for discharge after coronary bypass surgery in the 1990's: Are patients adequately prepared? *Journal of Cardiovascular Nursing*, 12(72), 72-86.
- Breemhaar, B., Van Den Borne, H.W., Mullen, P.D. (1996). Inadequacies of surgical patient education. *Patient Education and Counseling*, 28; 31-44.
- Cimochowski, G., Harostock, M., Brown, R., Bernardi, M., Alonzo, N., Coyle, K. (2001). Intranasal Mupirocin Reduces Sternal Wound Infection After Open Heart Surgery in Diabetics and Nondiabetics. *The Annals of Thoracic Surgery*. 71:1572-1579.
- D'Agostoni, R.S., Jacobson, J., Clarkson, M., Svensson, L.G., Williamson, C., Shahian, D.M. Readmission After Cardiac Operations: Prevalence, Patterns, and Predisposing Factors. *Journal of Thoracic and Cardiovascular Surgery*. 118:823-832.
- Devine, E.C., & Cook, T.D., (1986). Clinical and cost-saving effects of psychoeducational interventions with surgical patients: a meta-analysis. *Research in Nursing and Health*. 9:89-105.

- Hannan, E.L., Racz, M.J., Walford, G., Ryan, T.J., Wayne Isom, O., Bennett, E., Jones, R.H. (2003). Predictors of Readmission for Complications of Coronary Artery Bypass Graft Surgery. *Journal of the American Medical Association*, 290(6), 773-780.
- Hathaway, D. (1986) Effect of pre-operative instruction on post operative outcomes: a meta-analysis. *Nursing Research*. 35:269-275.
- Hobbs. R. (2002). Does pre-operative education of patients improve outcomes? The impact of pre-operative education on recovery following coronary artery bypass surgery: a randomized controlled clinical trial. *European Heart Journal*. 23, 600-601. doi:10.1053/euhj.2002.3129
- Ivarsson, B., Larsson, S., Luhrs, C., Sjoberg, T. (2005). Extended written pre-operative information about possible complications at cardiac surgery-do the patients want to know? *European Journal of Cardio-thoracic Surgery*. 28:407-414.
- Knowles, M.S. (1970). *The Modern Practice of Adult Education: Andragogy vs. Pedagogy*. Association Press.
- Krumholz, H.M., Amatruda, J., Smith, G.L., Mattera, J.A., Roumanis, S.A., Radford, M.J....Vaccarino, V. (2002). Randomized Trial of an Education and Support Intervention to Prevent Readmission of Patients With Heart Failure. *Journal of the American College of Cardiology*, 39(1):83-89.
- Lepczyk, M., Raleigh, E.H., & Rowley, C. (1990). Timing of pre-operative teaching. *Journal of Advanced Nursing*, 15, 300-306.
- Lithner, M., Zilling, T.. (2000). Pre- and postoperative information needs. *Patient Education and Counseling*, 40; 29-37.

- McEwen, M., & Wills, E. M. (2011). *Theoretical basis for nursing* (3rd ed.). Philadelphia, PA: Lippincott, Williams, and Wilkins.
- Nelson, S. (1996). Pre-admission education for patients undergoing cardiac surgery. *British Journal of Nursing*, 5, 335-340.
- Purdy, M. (1997). Humanist ideology and nurse education. I. Humanist educational theory Michael Purdy. *Nurse Education Today*, 17(3), 192-195.
- Shuldman, C.M., Fleming, S., Goodman, H., Brompton, R., Trust, H. (2002). The impact of pre-operative education on recovery following coronary artery bypass surgery, A Randomized controlled clinical trial. *European Heart Journal*, 23;666-674. doi: 10.1053/euhj.2001.2897
- Sjoling, M., Nordahl, G., Olofsson, N., & Asplund, K. (2003). The impact of pre-operative information on state anxiety, postoperative pain and satisfaction with pain management. *Patient Education and Counseling*, 51; 169-176.
- The joint commission: Facts about pain management*. (2012, January). Retrieved from http://www.jointcommission.org/assets/1/18/Pain_Management.pdf
- U.S. Department of Health and Human Services, National Institute of Health. (2010). *What is coronary artery bypass grafting?* Retrieved from http://www.nhlbi.nih.gov/health/dci/Diseases/cabg/cabg_what.html
- Wallace, L.M. (1986) Surgical patients' preferences for pre-operative information. *Patient Education & Counseling*. 7; 377-387.
- Watt-Watson, J., Garfinkel, P., Gallop, R., Stevens, B., Streiner, D. (2000) The impact of pre-operative education on pain management in acute care. *Nursing Research*. 2000a(49), 1-10.
- Watt-Watson, J., Stevens, B., Kats, J., Costello, J., Reid, G.J., & David, Tirone. (2004b).

Impact of pre-operative education on pain outcomes after coronary artery bypass graft surgery. *Pain*, 109(2004), 73-85. doi:10.1016/j.pain.2004.01.012

Webber, G.C., (1990). Patient education. A review of the issues. *Medical Care*. 28:1089-1103.

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| | | <p>Majority (81%) of patients/families who read the booklet reported that they would make go-ahead decisions in support of the study's goal to work together, also in preparation to length of hospitalization, the day of surgery.</p> | <p>Study did show good data as well as a few concerns. First off, the study may have been affected by hospital mergers and layoffs. Secondly the study found a significant decrease in pain levels, time and length of stay in men vs. women.</p> |
| <p>Shuchman, C.M., et al (2002)</p> | <p>Study found decreased anxiety, depression, and walking at 6 minutes post-surgery. 35% participants randomized into two groups. Intervention group attended a 10 day of education by members of healthcare team.</p> | <p>No significant differences were found between the two groups early after surgery or at any measure. The intervention group actually had a longer post-operative hospital stay.</p> | <p>Study found unexpected results. Some considerations for potential participants and the study design. The extra visit required at the hospital for education session acted as a significant deterrent to potential participants. Subjects were not blinded to what group they were in and time between surgery and when visit was varied sometimes up to a year.</p> |
| <p>Adler, J.M., et al (2002)</p> | <p>Randomized controlled trial. To assess effect of a multidimensional (education, exercise, mobilization) pre-operative</p> | <p>Patients in intervention group spent an average of 1.5 days in hospital as well as less than 10% quality of life and mood.</p> | <p>Good study with positive results. Intervention was extensive which may limit it's practicality.</p> |

Appendix A

Summary of Study Characteristics Table

| Author(s), Year | Description of Study | Conclusions | Comments |
|---------------------------------------|--|--|--|
| Watt- Watson, J., et al. (2004) | Randomized controlled clinical trial, to assess pre-operative educational on post-operative pain outcomes. Intervention group subjects given special 'pain' booklet 2-7 days before CABG surgery. 406 participants of which 346 were men. | Majority (81%) of patients/families who read the booklet reported it as useful. Mixed results-no change in amount of analgesics used between the groups, also no improvement in length of stay between the two groups. | Yielded some good data as well as a few concerns. First off the study may have been affected by hospital mergers and layoffs. Secondly the study found a significant difference in pain interference and length of stay in men vs. women. |
| Shuldman, C.M., et al. (2002) | Randomized controlled clinical trial. Designed to assess the impact of pre-operative education on postoperative pain, anxiety, depression, and wellbeing at 6 months post-surgery. 356 participants randomized into two groups. Intervention group attended a full day of education by members of healthcare team. | No significant differences were found between the two groups early after surgery or at six months. The intervention group actually had a longer post operative hospital stay. | Study found unexpected results. Some considerations is majority of participants were of the same demographics. The extra visit required to the hospital for education session acted as a significant deterrent to potential participants. Subjects were not blinded to what group they were in and time between surgery and education was varied-sometimes up to a year. |
| Arthur, H.M., et al. (2000) | Randomized controlled trial. To examine effect of a multidimensional (education, exercise, reinforcement) pre-operative | Patients in intervention group spent on average one less day in hospital as well as less time in ICU. Quality of life at 6 months | Good study with positive results. Intervention was extensive which may limit it's practicality |

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| | intervention on pre and post surgery outcomes in patients awaiting elective CABG surgery. 249 subjects were used in the study. | was also found to be superior in the intervention group. | in larger groups, but it did raise a good point about using the wait time for surgery in a beneficial and productive way. |
| Asilioglu, K., (2004) | Two group comparative design using 100 patients having open heart surgery. Intervention group was given planned teaching. Patients were given Self-Evaluation questionnaires. | Did not find significant difference in self-reported anxiety levels between the two groups. The patients in the intervention group however did report satisfaction with the additional pre-operative education. | Study yielded unexpected results however did have implications for further research. Study also listed a few potential factors that may have affected their results, including: condition of hospital and rooms, communication breakdown amongst staff members, and administration times of teaching. |
| Breemhaar, B., et al. (1996) | This study looked at the inadequacies of surgical patient education. It was conducted in two 600 bed hospitals using observation, interviews with health care providers, patient interviews, structured interviews, and data analysis. | Found interesting data in terms of # of events hospital patients go through and # of personnel they meet through the course of their procedures. Not unusual for patients to undergo 20+ events over procedures while in the hospital and often meet 25+ different professionals. >50% of patients interviewed wanted more information before their procedures. Patients also often confused on the roles of various health care personnel in their procedure. | Observational study that provided great data to really put into perspective how much really goes on over the course of a hospitalization. |
| Beggs, V.L., et al. (1998) | Coronary Artery Bypass Surgery Questionnaire developed by Nurse Practitioners, Clinicians, | Patients rated all the information they received as important with the top three items of importance | Good study that yielded specific data in regards to teaching methods, teaching |

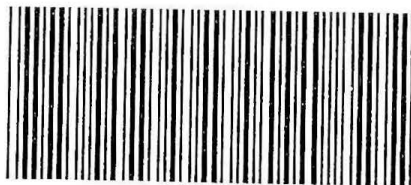
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| | nurse managers, staff nurses, and cardiac rehabilitation nurses was developed was used to assess patients concerns and knowledge deficits. Those participating then chose what were most important items to them in regards to education. i.e. incision care, medication issues, pain, activity restrictions, etc. 300 participants completed the survey. | per patient rating being: incision care, possible complications, and who to call with questions. In regards to teaching methods used oral or individual teaching was rated highest by patients, with written and group presentations being favored next. Learning prior to surgery was preferred by 21% of participants. Patients >71 years of age rated video teaching as significantly less helpful. | topics, and timing of teaching. Could be of value when developing a teaching program in terms of what topics are valued most important by the patients. |
| Nelson, S., (2006) | Convenience sample of 40 participants was selected from a population of 150 patients awaiting cardiac surgery. Two groups of twenty were created one group going through the normal pre-operation hospital routine, the intervention group attended a 3 hour pre-admission seminar. | Data showed that those who attended the class had a lesser degree of fear 29% vs 36%, also 100% of those who attended the seminar reported reduced fear prior to surgery. Almost 60% of those who attended class chose to tour the ICU, all of them reported this as beneficial. | Good study however the # of participants was very low. Yielded positive data in regards to the benefit of a pre-operative seminar. Also of note from this study is that 88% of the patients who attended the seminar brought someone with them and almost all of these participants found the seminar useful. |
| Ivarsson, B., et al. (2005) | Non-randomized design with intervention group and control group. Power analysis suggested a target sample of 244, actual sample number was 338. Both groups were given basic information, the intervention group was provided with detailed information regarding surgical complications both common and rare. | Surveys completed pre, and post-operatively showed the intervention group was significantly more satisfied with the written information they received, including expected surgical outcomes, and possible complications. The intervention group also felt that they could discuss treatments with their | Study showed that patients do indeed want detailed information regarding their surgery and potential complications. Receiving this information prior to surgery and seeing their surgeon afterwards was also reported as beneficial |

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| | Participants were then screened with two questionnaires that assessed distress, emotional state, and satisfaction with the information they received. | surgeon to a higher degree than the control group felt. Little to no difference amongst the groups was discovered in regards to anxiety or depression. | as this provided an opportunity to discuss questions with him/her. |
| Lithner, et al. (2000). | Randomized study of 50 patients scheduled for surgery. Subjects were given questionnaire of 48 questions divided into seven different groups. Responses were in the form of a five-point likert scale. Questions were regarding types of information desired and methods of receiving that information. | Items that majority of patients wanted information on were surgery complications, hospital stay, post-op checkups. Of the seven most important questions as rated by the patients all seven of them had to do with post-operative pain. Booklets and verbal instruction were the preferred methods of information delivery. | This study provided great information as to what patients want to know and how they want to receive that information. Postoperative pain is by far the most popular topic patients want to learn about. |
| Lepczyk, M., et al. (1990) | Convenience sample of 74 patients who presented for CABG surgery. Study was designed to look at the effect timing of pre-operative teaching had on patient anxiety levels. One group was given education 2-7 days prior to surgery, second group was given education the evening of their admission to the hospital. | No significant difference was reported by patient questionnaire on anxiety level between the two groups. Study did have a area of concern in that researchers were unaware of the amount of data the patients physicians may have provided to them prior to their surgery. | If the data found here is accurate it would simplify the timing of a pre-operative education session. The class could be scheduled to just once a week or once every two weeks simply because this data does not show an improvement in anxiety scores based on timing of pre-op teaching. |
| Sjoling, M., et al. (2003). | Prospective experimental design to assess whether specific information given pre-operatively would provide patients with better pain relief. Sixty participants were divided into two groups. Intervention group was provided extra leaflet on pain control as well as extra | Minimal difference discovered in amount of analgesics consumed between the two groups and no change in length of hospitalizations. Intervention group did however report 100% satisfaction with their pain control compared to 87% of control group reported | Study did show that patient satisfaction does increase with the providing of supplemental education. |

| | verbal instructions. | satisfaction. | |
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| Hannan, et al. (2003) | Researchers reviewed data from patients who had CABG surgery in the state of New York in 1999. Over 16,000 patient charts were reviewed for causes of readmissions, readmission rates, and demographics that patients who were readmitted had in common. | Found overall readmission rate to be >15%. Top causes of readmission were infection and heart failure. Data was broken down to most common demographics per readmission diagnosis, rates for surgeon volume, and pre-operative morbidities or complications. | A readmission rate of 15% is rather significant. This seems like a number that with the right interventions could surely be decreased. |
| D'Agostino, et al. (1999) | Researchers looked at hospital readmission rates after CABG surgery and reasons for readmissions. | Readmission rate was found to be 13.5% with top reason for readmission being heart failure. Interesting find here is that researchers found that a shorter hospital stay was associated with a lower readmission rate as well. | Study which found similar findings to previously mentioned study in terms of readmission rates and reasons for readmission. Study helped to verify that the readmission rate is significant. |
| Cimochowski, et al. (2001). | Study of 992 patients who underwent open heart surgery to look at the rates of sternal wound infections and the potential to decrease the rate through intranasal Mupirocin. | Found significant success with the use of intranasal Mupirocin. Report significant costs, hospitalization, and mortality involved with sternal wound infections | Reiterates the importance of providing patients with education and rationale for proper pre- and post operative care. |
| Krumholz, et al. (2002) | Prospective, randomized trial of using formal education and support to reduce hospital readmission rates for patients with heart failure. Study used a one hour session with nurse educator prior to discharge followed up by periodic phone calls from nurse to patients. | Found that intervention of education and support decreased hospital readmission rates by approximately 40%. Resulting in significant reduction in hospital costs, mortality, and mortality. | The intervention used in this study varies from the one I am proposing, however the concept of enabling the patient to participate in their own care and the significant dividends it can return is similar to the goals of a formal education class. |

Thesis / Independent Study ---- Jahn, Patrick C.

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