Comfort Contract:
An Intervention to Increase Postoperative Comfort

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University of Akron

Spring 2006

Nursing Inquiry I

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Introduction

Coronary Artery Bypass Graft (CABG) surgery is performed approximately 350,000 times annually in the United States, making it the most commonly performed major operation (Medicinenet, 2005). Post operative pain is the most frequent complication of this surgery and, as a result, nursing research has addressed this issue with marginal outcomes. The link between comfort and pain has not been clearly identified, but it has been documented when nurses intervene in a positive way to improve the patient's comfort, this has a positive affect on the whole person (Kolcaba, 1992). One possible intervention is the development of a comfort contract between the patient and nurse. The American Society of Perianesthesia Nurses (ASPAN) guideline provides the framework for an implementation of a comfort contract in this patient milieu. The **problem** this study seeks to address is how to increase patient comfort in post-operative patients who will receive cardiac bypass surgery.

Literature Review

Watson, Stevens, Katz, Costello, Reid, & David (2004) cited studies that established patients in the cardiovascular setting, including postoperative cardiac bypass surgery, have reported considerable unrelieved pain. Pain has been one of the main reasons for readmission and emergency room visits postoperatively. In fact, studies have demonstrated that a majority of this patient population has received inadequate pain management while hospitalized. In addition, previous studies demonstrated that pain education material provided was either minimal or non-existent; despite the Joint

Commission for Accreditation of Healthcare Organizations emphasis on the improvement of pain education and management (Watson et al., 2004). Therefore, this population exhibits that conventional means of pain management have been ineffective and warrants further study into adequate pain management. A comfort contract may help bridge the gap between pain education and pain management because of its focus and integration on both of these experiences. The **purpose** of this study will be to measure the effectiveness of a comfort contract on increasing comfort therefore increasing pain control with patients in the first five days post-operative cardiac bypass surgery.

Comfort is a basic human need essential to all human beings. The definition of comfort is complex and multidimensional (Kolcaba, 1992); within the nursing context comfort impacts patient outcomes. The extent of this impact is important because of its implications in other patient populations within the nursing spectrum.

The nurse plays a fundamental role planning interventions that meet the patient's need for comfort in order to promote positive patient outcomes. Morse (2002) describes the nurse's role as a feedback loop, enabling the nurse to 'read' the patient and determine the effectiveness of the comfort strategy. Nurses need to incorporate the patient as a "co participant" or partner in care to promote positive comfort outcomes (Malinowski & Stamler, 2002).

Cameron indicates that patients are not passively waiting for comfort to occur to them – they are in a constant state of actively working toward increasing their own comfort (1993). Nurses must include their patients in the nursing process by allowing the patient to assess their own particular needs. This provides a framework in which both the

nurse and the patients collaborate to achieve a mutual goal: to increase the patient's personal level of comfort and thereby augment the healing process in a positive manner.

Comfort is increased when the patient's total state of being; physical, psychological, spiritual, and social is in a state of relief, ease and/or transcendence (Kolcaba, 1991). It is practical to infer that comfort is a desirable outcome of prescribed nursing interventions because it promotes physical and psychological performance. Kolcaba and Wykle (1997) have proposed, "Comfortable patients heal faster, cope better, become rehabilitated more thoroughly, and die more peacefully than do the uncomfortable (p.12)." In addition, Cameron states (1993) and Kolcaba (1994) state that, "Comfort is a strengthening process; patients who lack comfort are weakened individuals (p.425)."

Conceptual Framework

This study's framework is based on Comfort Theory (Kolcaba, 2003) because it encompasses the ASPAN Pain Guidelines and holistic nursing interventions. These interventions guide nurses to design and promote comfort, or holistic outcomes. The midrange theory has been adapted to the perioperative setting, specifically cardiac bypass surgery. This particular conceptual framework (Appendix A) is multivariate and interrelationships are described within the scope of the study denoted by arrows.

The top line of this diagram has been extracted from the conceptual framework for variables testing Kolcaba's Comfort Theory. The combination of healthcare needs and nursing interventions in conjunction with intervening variables yield the patient's perception of comfort. Variables contained within the second line of this framework demonstrate their application to the Comfort Theory Concept. Preoperative expectations

in conjunction with the comfort contract and anxiety interact to yield comfort and increased pain control. The overall purpose of the framework is to attain increased comfort and therefore increase post operative pain control.

Research Question. Are comfort contracts signed pre-procedurally by patient's age 50-70 who will have cardiac bypass surgery associated with an increase in comfort and a decrease in pain post-operatively compared to a usual care group?

Methods

Design

The experimental design will be conducted on 90 adult patients who are scheduled to undergo cardiac bypass surgery in an urban, northeast regional hospital. Upon signing informed consent with a Certified Registered Nurse Anesthetist (CRNA), the researchers conducting this study, randomization will be established into the experimental and control group. The patient population will consist of 45 patients in the experimental group who will complete a Comfort Contract (Appendix E) and 45 patients in the control group receiving usual treatment per hospital standards. A proposal will then be submitted to the Institutional Review Board (IRB).

Sample/Setting

Previous research using Kolcaba's comfort questionnaire suggests a medium effect size for the power analysis, in this case the alpha will be set at 0.10. A sample size of 45 patients for each group will be required to observe a significant difference between groups. The total sample size for this study accounts for approximately 8% attrition.

To be eligible for the study, the adults will be between the ages of 50 and 70, be fluent in English, and in the pre-operative period of a non-emergent cardiac bypass

surgery. Those with previous cardiac surgeries, cancer, chronic pain issues, and prior experience with a comfort contract or psychological disorders will be excluded.

The research assistants, unknown to the patient and uninvolved with his/her care, will choose candidates eligible for the study based on the inclusion/exclusion criteria per the demographic sheet (Appendix F). Possible candidates will be contacted by the research assistants. Information about the study, including the definition and use of the comfort contract, will be provided to the study participants.

Recruitment/Protection of Human Rights

Potential candidate's demographic sheets and history will be reviewed preoperatively by research assistants. The preoperative demographic sheet and/or patient's history will determine eligibility for the study. The participants will be given a brief explanation on the purpose of the study including the risks and benefits and patient confidentiality. It will also be explained to the patient that he/she may withdraw from the study at anytime without fear of punishment. As a reward for participating, each of the 90 adults participating in the study will be receive free parking for visitors during the course of their hospitalization.

Bulletins will be posted in participating-unit break rooms along with emails sent to staff nurses to explain the purpose of the study and for nurse recruitment. The research incentive will be two free movie passes for each nurse participating in the study. All incentives will be provided to the nurses after the completion of the study.

Training

Research assistants will be trained and tested to demonstrate an adequate knowledgebase regarding the use of both the General Comfort Contract (Appendix C)

and The Pain Assessment Tool (Appendix B) during a one-day seminar. Topics discussed during the educational session will include information including patient withdrawal from the study and completion of research instruments.

Participating nurses will be educated by a CRNA at the beginning of their shift on the purpose of the study, comfort contract (Appendix E), the research schedule (Appendix H), and the use of the nursing comfort contract checklist (Appendix G).

Data Collection

The Comfort Contract will be handed out to the experimental group participants to complete during the twenty-four hour preoperative phase. All Comfort Contracts will be collected and the interventions will be listed on the nursing comfort contract checklist by the research assistants. The Comfort Contract, research schedule and nursing comfort contract checklist will be placed in the patients' chart under the 'research' tab on magenta colored paper.

The General Comfort Questionnaire (Appendix C) and Pain Assessment Tool (Appendix B) will be administered to both groups within 24 hours preoperatively, on post-op day one, day three (when increased ambulation result in increased pain levels) and day five (when patients are usually discharged from the hospital) (Watt-Watson et al., 2003). The patient will independently complete the General Comfort Questionnaire and the Pain Assessment tool, but the research assistant will be available to assist with either tool. If the patient is unable to complete or chooses not to complete the questionnaire by the end of the day, then he/she will be removed from the study.

Independent Variable (Comfort Contract)

The intervention used in this study is intended to determine whether a preoperative comfort contact will have a positive effect on the patient's comfort and pain management postoperatively. Patients will be invited to participate in this study per the Comfort Contract Intervention Protocol (Appendix D). The experimental group will receive the Comfort Contract (Appendix E) and the control group will receive pain management per hospital protocol. To ensure the continuity of the study, the researchers (CRNA) will educate the primary nurse about the purpose of the study and comfort contract (Appendix E), the research schedule (Appendix H) and the use of the nursing comfort contract checklist (Appendix G).

Dependent Variables

In both groups, comfort will be measured by the patient with the Pain Assessment Tool (Appendix B) and the General Comfort Questionnaire (Appendix C). The Pain-O-Meter™ will be the pain assessment tool used in this study. In a correlational and comparative study with 279 rheumatoid arthritis, postoperative and laboring patients, the Pain-O-Meter™ demonstrated moderate to high correlation with test-retest reliability values ranging from 0.68 to 0.84 ($P < 0.001$) within patient population (Gastron-Johansson, 1996). In addition, good validity was demonstrated by a high correlation of 0.85 ($P < 0.001$) between the word and visual analog scale in the postoperative patient population. The second tool, the General Comfort Questionnaire, is 48 self-report items tabulated by reverse scoring of negative items and adding the total (Kolcaba, 1997). The higher scores indicate increased comfort. This instrument provides measurements of comfort by manipulation of the environment (Kolcaba, 1997), which the staff nurses will

be performing in response to the comfort contract. Previous reliability with a sample of 253 hospitalized patients revealed a Cronbach's alpha of .90 (Kolcaba, 1992).

These tests will be administered preoperatively, on day one, day three (when increased ambulation results in increased pain levels) and day five (when patients are usually discharged from the hospital) (Watt-Watson et al., 2003).

Primary Statistics

The Pain Assessment Tool and General Comfort Questionnaire will be used to measure pain and comfort at four specific times as stated previously. A MANOVA test will be used to obtain the F statistic to measure the interaction between three time periods and two groups. The F-ratio statistic will then be computed by comparing the variability both **between** groups and **within** groups. The F-ratio statistic will be compared against an alpha of 0.10 (Polit & Beck, 2004).

Expected Findings

The Pain Patrol research team believes that there will be significant increases in the level of comfort in the experimental group versus the control group. The study performed by Pain Patrol will be clinically applicable in the respect that by addressing the patients preoperative and CABG expectations in the postoperative period, patients will experience decreased anxiety, increased pain control and increased overall comfort during their hospitalization. The application of the comfort contract will demonstrate that when patients participate in their care, greater comfort and patient satisfaction will be achieved.

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Appendix A

CONCEPTUAL FRAMEWORK*

HEALTHCARE NEEDS	+	NURSING INTERVENTIONS	+	INTERVENING VARIABLES	↔	PERCEPTION OF COMFORT	
↓		↓		↓		↓	
PREOPERATIVE CABG PAIN EXPECTATIONS	+	COMFORT CONTRACT (ASPAN)	+	ANXIETY	↔	COMFORT ↕ INCREASED PAIN CONTROL	

* This table is based on Comfort Theory adapted from Kolcaba, K. (2003).

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Appendix B

PAIN ASSESSMENT TOOL

The Pain-O-Meter

Fig. 1. Side I of the Gaston-Johansson Pain-O-Meter (U.S. Patent 5,018,256, May 28, 1991).

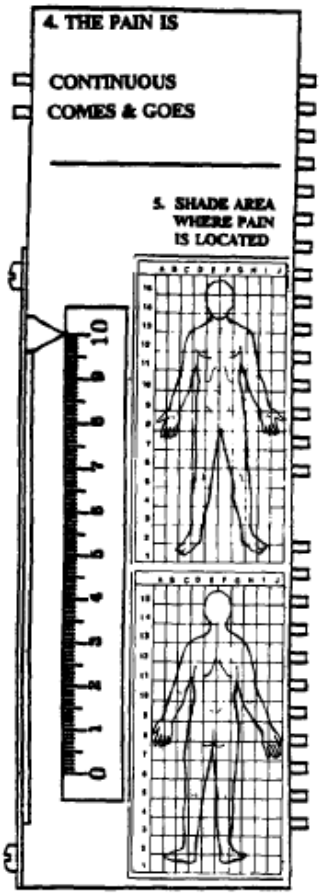

Fig. 2. Side II of the Gaston-Johansson Pain-O-Meter (U.S. Patent 5,018,256, May 28, 1991).

pain tools to assess pain intensity in clinical practice is essential because adequate assessment is

How to Use:

The Pain-O-Meter is a hard plastic pain assessment tool. A visual analog scale is located on one side and requires the patient to move the marker along the 10cm vertical straight line to indicate pain intensity. A list of words may also be used to assign intensity of the affective and sensory component of pain, each receiving a numerical value (range, 1-5). The numbers are then added to indicate pain level. Both or one of the pain aspect assessment tools may be used to give a multidimensional assessment of patient pain (Gaston-Johansson, 1996).

Appendix C

GENERAL COMFORT QUESTIONNAIRE

		Strongly Agree 4	3	2	Strongly Disagree 1
1.	My body is relaxed right now	4	3	2	1
2.	I feel useful because I'm working hard	4	3	2	1
3.	I have enough privacy	4	3	2	1
4.	There are those I can depend on when I need help	4	3	2	1
5.	I don't want to exercise	4	3	2	1
6.	My condition gets me down	4	3	2	1
7.	I feel confident	4	3	2	1
8.	I feel dependent on others	4	3	2	1
9.	I feel my life is worthwhile right now	4	3	2	1
10.	I am inspired by knowing that I am loved	4	3	2	1
11.	These surroundings are pleasant	4	3	2	1
12.	The sounds keep me from resting	4	3	2	1
13.	No one understands me	4	3	2	1
14.	My pain is difficult to endure	4	3	2	1
15.	I am inspired to do my best	4	3	2	1
16.	I am unhappy when I am alone	4	3	2	1
17.	My faith helps me to not be afraid	4	3	2	1
18.	I do not like it here	4	3	2	1
19.	I am constipated right now	4	3	2	1

		Strongly Agree			Strongly Disagree
		4	3	2	1
20.	I do not feel healthy right now	4	3	2	1
21.	This room makes me feel scared	4	3	2	1
22.	I am afraid of what is next	4	3	2	1
23.	I have a favorite person(s) who makes me feel cared for	4	3	2	1
24.	I have experienced changes which make me feel uneasy	4	3	2	1
25.	I am hungry	4	3	2	1
26.	I would like to see my doctor more often	4	3	2	1
27.	The temperature in this room is fine	4	3	2	1
28.	I am very tired	4	3	2	1
29.	I can rise above my pain	4	3	2	1
30.	The mood around here uplifts me	4	3	2	1
31.	I am content	4	3	2	1
32.	This chair (bed) makes me hurt	4	3	2	1
33.	This view inspires me	4	3	2	1
34.	My personal belongings are not here	4	3	2	1
35.	I feel out of place here	4	3	2	1
36.	I feel good enough to walk	4	3	2	1
37.	My friends remember me with their cards and phone calls	4	3	2	1
38.	My beliefs give me peace of mind	4	3	2	1
39.	I need to be better informed about my health	4	3	2	1
40.	I feel out of control	4	3	2	1

		Strongly Agree			Strongly Disagree
		4	3	2	1
41.	I feel crummy because I am not dressed	4	3	2	1
42.	This room smells terrible	4	3	2	1
43.	I am alone but not lonely	4	3	2	1
44.	I feel peaceful	4	3	2	1
45.	I am depressed	4	3	2	1
46.	I have found meaning in my life	4	3	2	1
47.	It is easy to get around here	4	3	2	1
48.	I need to feel good again	4	3	2	1

Permission was obtained from Dr. Katherine L. Kolcaba, PhD

Appendix D

Comfort Contract Intervention Protocol

Procedure

1. The nurse will enter patient's room in either the preoperative holding area or on the patient's specific unit within a 24-hour time period before surgery.

2. Consent for research study will be obtained. Questions will be answered regarding the study's purpose, risks and benefits.

3. After the consent is obtained and questions answered, the patient will complete the Pain Assessment Tool (Appendix B) and the General Comfort Questionnaire (Appendix C).

4. Randomization will determine whether patients are in the experimental group or the control group.

5. Patients assigned to both the experimental group and control group will complete the Pain Assessment Tool and General Comfort Questionnaire at the four designated collection times, the first being within 24 hours preoperatively. In addition, patients in the experimental group will complete a Comfort Contract (Appendix E) while patients in the control group will receive usual care per hospital standards.

6. The patients will enter into the operating suite and the operation will be performed.

7. At day one (24 hours), day three (96 hours) and day five (120 hours), the Pain Assessment Tool and the General Comfort Questionnaire will be completed by the patient. If the patient is either unable to answer or chooses not to answer either the Pain Assessment Tool or the General Questionnaire after the specified time frame, he/she will be removed from the study.

Appendix E

Expiration Date_____

Comfort Contract

Thank you for taking the time to complete the comfort contract. The purpose of this contract is to increase your comfort and pain control while you are hospitalized. Please circle one response for all items except when indicated otherwise. Please take your time and complete the following questions.

Please use the following scale to answer the provided questions:

Extreme discomfort Comfort Extreme comfort

1 2 3 4 5 6 7 8 9 10

The Comfort Experience:

1. I expect a comfort level of:

   a. _____ when the anesthesia wears off.

   b. _____ on post operative day 1

   c. _____ on post operative day 3 (when ambulating)

   d. _____ on post operative day 5 (study conclusion day)

2. These interventions might assist to increase my comfort:

Warming Blanket (Recovery Room)	Pet Visitation
Music	Cold Wash Cloth
Pillows – location: _____	Family Visits (When Anesthesia wears off)
Massage	
Other _____	

(CIRCLE ALL THAT APPLY)

3. In the past, I have required (small, moderate, large) amounts of pain medication to keep me comfortable.

4. I have had success with the following medications during my previous admissions to the hospital _____

5. The following medications I had taken have resulted in undesirable outcomes _____
_____
The undesirable outcomes have included _____
_____

Nursing Interventions:

6. I prefer personal hygiene to be performed during the (morning, afternoon, evening).

7. I prefer my family to be present (all the time, occasionally, not at all) during my recovery.

8. I wish to have the following family member present: _____.

9. I prefer to exclude the following persons from visiting my room_____.

10. I prefer to have a fan present in my room. (Yes/No)

11. I prefer updates regarding my status (only when asked, daily, not at all).

Appendix F

Research Participant Demographic Sheet

PARTICIPANT ID # _____

Participant name: _____

Address: _____

Phone number: ( )_____--_____

Date of birth: ___/___/____

Gender: Male □ Female □

Race/ethnicity: African-American□ American Indian□ Asian Indian□
Asian□ Caucasian□ Hispanic□ other□

Highest educational level attained: <9th grade□ high school□ undergraduate □

graduate□ other□

Marital status: single □ married □ separated □ divorced □
widowed □

Income level: $_____

Insurance: Medicaid □ Medicare □ Private □

Patient information

1. Have you ever participated in a research study before? (Circle One) Yes No

2. Are you part of a pain management program? (Circle One) Yes No

3. Have you ever been diagnosed with cancer? (Circle One) Yes No

4. Have you ever been diagnosed with any psychological disorder? (Circle One) Yes No

5. Have you ever been diagnosed with chronic pain disorder? (Circle One) Yes No

6. Have you ever had cardiac surgery before? (Circle One) Yes No

If you answered yes to any of the questions above, please describe in detail below: