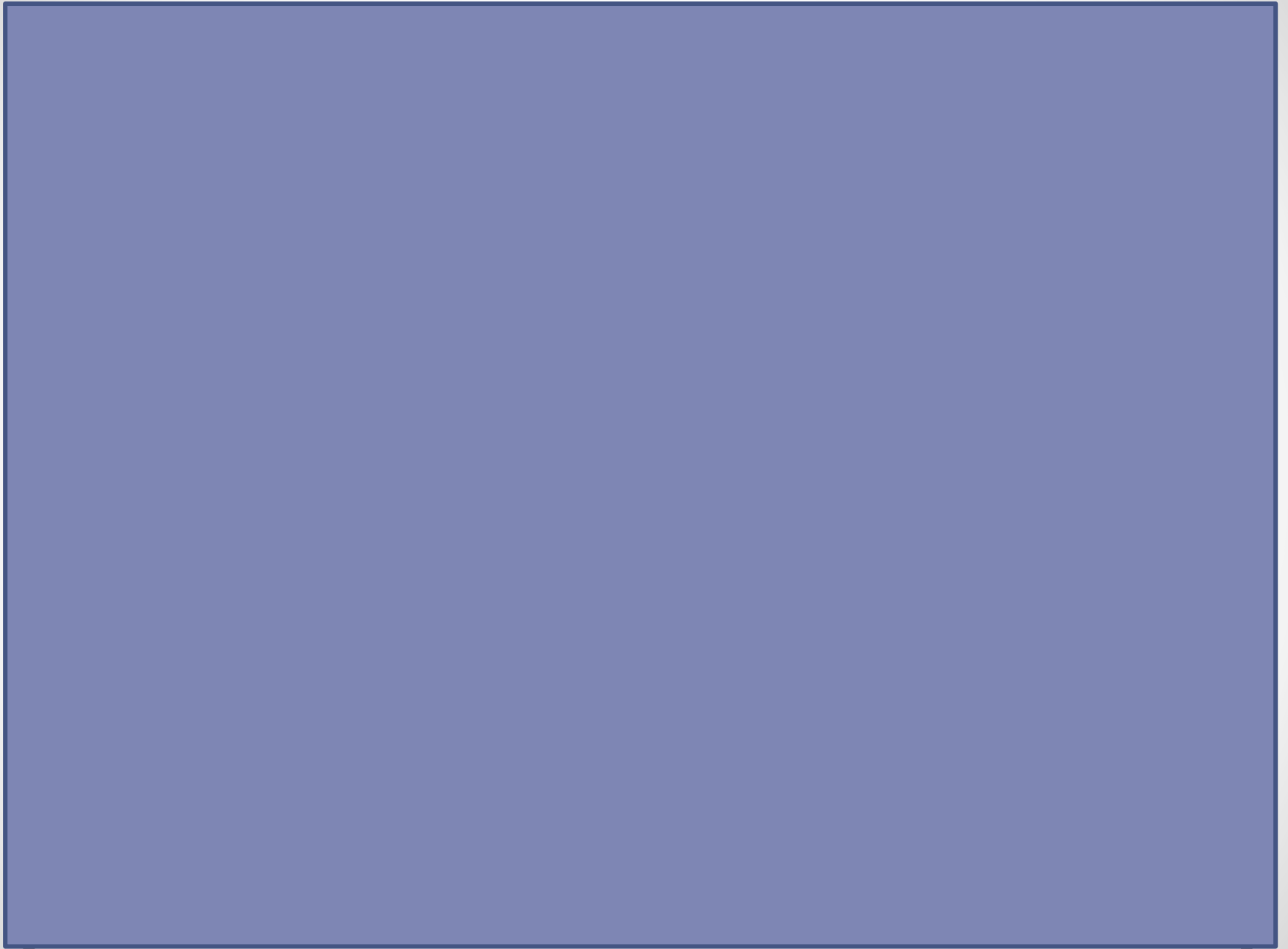


The Effect of Education on Anxiety in the Pre-Surgical Spine Patient

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Learning Objectives

- Identify the impact of back pain on the individual and society
- Perceive the psychological & physiological impact of anxiety on the patient
- Discuss the effect of nursing education on the perioperative experience



Significance of Problem

- 85% of the U.S. population
- 2012: 28 million hospitalizations
- 2013: 17% of GDP: healthcare expenditures
- 2003-2012: Top 5 surgeries
 - Total knee arthroplasty (TKA)
 - Coronary angioplasty
 - Non-fusion spine surgeries
 - Total or partial hip arthroplasties
 - Spine fusions

Pre-operative Patient Education

- Decreases anxiety
- Increases the patient's control over their pain
- Increases confidence
- Greater sense of preparation for the upcoming surgery

Anxiety & Surgery

- Pre-operative anxiety
 - is normal
 - compromises the peri-operative experience
 - a reduction can enhance surgical outcomes

Anxiety Reduction Methods

Music Therapy

Aromatherapy

Healing Touch

Exercise & Leisure Time Activities

Religion, Spirituality, Meditation

Nursing Presence

Education

Review

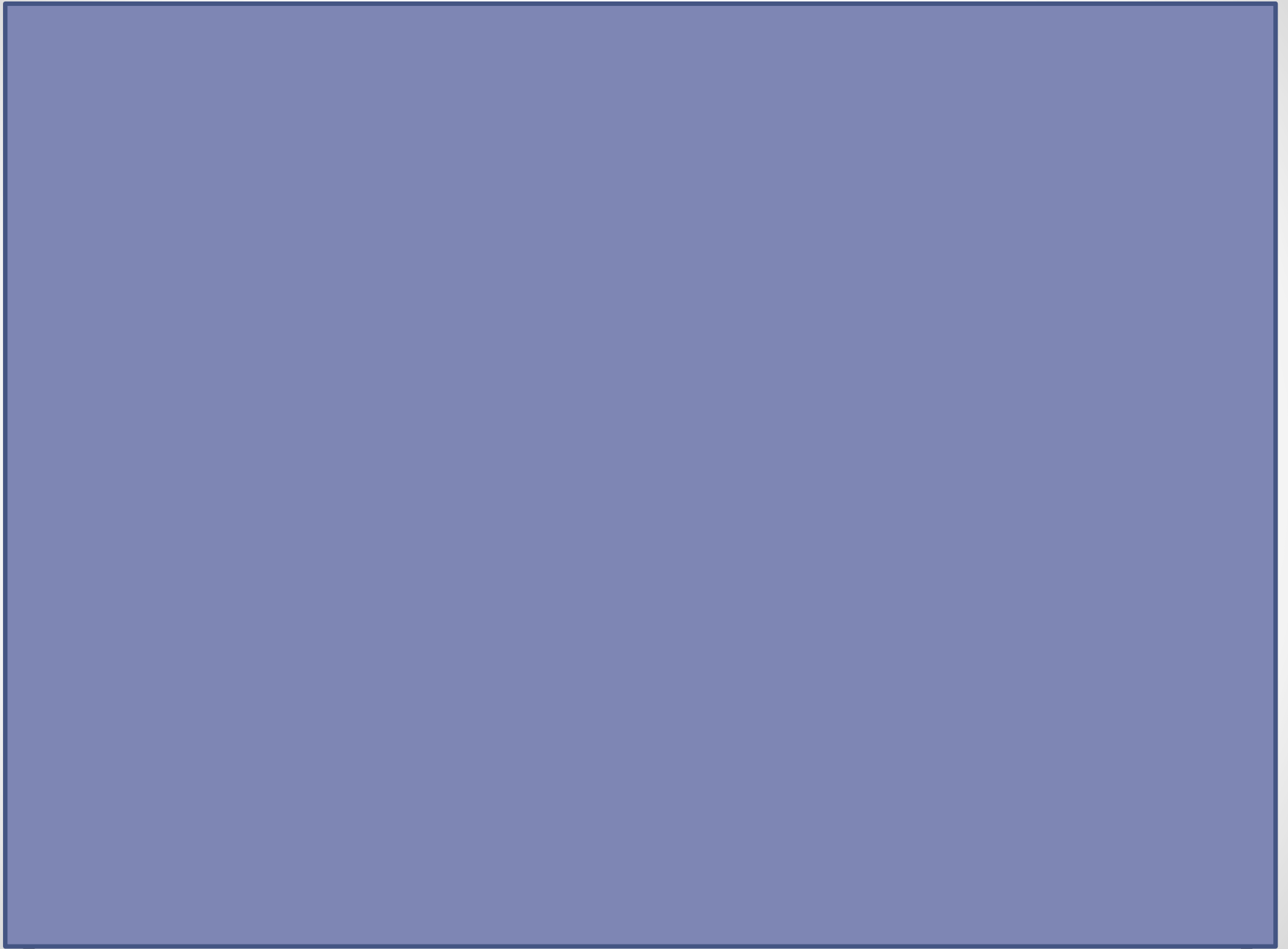
**Surgery
creates
anxiety**

**Pre-
operative
anxiety is
normal**

**Anxiety
induces
the stress
response**

**Reducing
anxiety
can alter
the stress
response**

**Education
reduces
patient
anxiety**



Purpose of Research

Purpose	Question
To compare the anxiety level of a sample of pre-surgical spine patients before and after an education class	Does attendance at a structured, hospital-based, pre-operative education class influence the level of anxiety of the pre-surgical spine patient as measured immediately prior to the class and immediately after the class?

Organizing Framework

- Environment of Care Theory of Florence Nightingale
- Andragogy Theory of Malcolm Knowles

Research Methodology & Design

Research Method

Quantitative

Non-
experimental

Research Design

Comparative

- Single-group

Convenience Sample Selection

Eligibility Criteria

- Spine surgery patient
- Attendance at a hospital-based, spine-focused, pre-operative education class
- At least 18 years of age
- No participation in any other pre-surgical education class
- Completion of:
 - ✓ Consent form
 - ✓ Demographic survey
 - ✓ Visual analog scale before and after the education class

IRB and Instrumentation

Protection of Subjects

Informed Consent

Voluntary
Participation

Participant
Confidentiality

Instrumentation

Demographic
Survey

Visual Analog
Scale for Anxiety
(VAS-A)

Research Instrument

Visual Analog Scale for Anxiety

Compared to:

- Hamilton Anxiety & Depression Scale
- Beck Anxiety Inventory
- Amsterdam Preoperative Anxiety Scale
- Spielberger's State Trait Anxiety Instrument

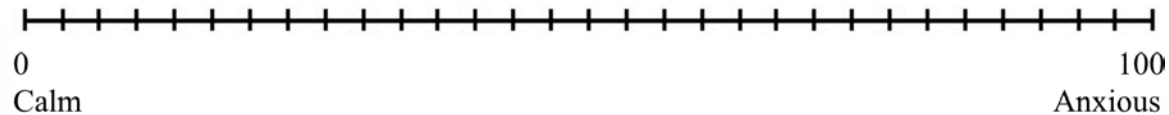
Valid and Reliable

Visual Analog Scale

Visual Analog Scale – Anxiety

Post-Test

How anxious do you feel right now?



Data Analysis

Data Collection and Analysis

Done to determine if patient anxiety levels were different before and after education

Statistical Package for the Social Sciences (SPSS), Version 22

Statistician consultation

Research Findings

Background Characteristics	
Convenience Sample	1 orthopedic spine practice Southwest region of the U.S
Spine-focused education Structured, hospital-based	32 class attendees 20 eligible participants
Ethnicity	19: Non-Hispanic White 1: African-American
Age Range	30 – 79
Sex	Male: 13 Female: 7
Types of Spine Surgery	Cervical: 8 Thoracic: 1 Lumbar: 11

Research Findings

Presentation of the Data

Pre-education anxiety Post-education anxiety	38.7% 25.1%
After education	75% (n=15): lower anxiety 15% (n=3): same level 10% (n=2): higher anxiety
Men Pre-education: 46 Post-education: 33	Women Pre-education: 20 Post-education: 14

Findings:

Education lowered the level of anxiety in the pre-surgical spine patient after a structured, hospital-based education provided by a nurse.

Findings

Paired t-test

Paired Samples Test									
		Paired Differences							
				95% Confidence		t	df	Sig. (2-tailed)	
		Mean	SD	Std. Error Mean	Interval of the Difference Lower Upper				
Pair 1	Pre - Post	13.67000	14.66902	3.28009	6.80469 20.53531	4.168	19	.001	

Paired samples t test was calculated to compare the mean pretest score to the mean post-test score of the anxiety levels of the sample. A significant difference from the pre-test anxiety levels and the post-test anxiety levels was found.

Pearson's r test

Correlations				
		Pre	Post	
Pre	Pearson Correlation	1	.908**	
	Sig. (2-tailed)		.000	
	N	20	20	
Post	Pearson Correlation	.908**	1	
	Sig. (2-tailed)	.000		
	N	20	20	

** . Correlation is significant at the 0.01 level (2-tailed).

Pearson correlation coefficient was calculated for the relationship between the pre-education anxiety level VAS score and the post-education anxiety level VAS score. A strong positive correlation was found indicating a significant linear relationship between the two variables.



Discussion

- Structured, pre-operative education that addresses patient fears and peri-operative events reduces patient anxiety
- Education that reduces patient anxiety can result in
 - shorter hospital stays
 - reduced incidence of surgical site infections
 - shorter overall post-operative recovery
 - decreases in hospital resources and patient expenditures

Recommendations for Further Study

- Larger sample size
- Effect of pre-surgical anxiety on post-operative pain
- Educational material and delivery methods
- Cortisol measurements
 - At time of education
 - Immediately prior to and after surgery
 - Post-op days 1 and 2

Summary

- Spine surgeries are increasing
- Patient anxiety is reduced with pre-operative education
- Nurse educators can have a positive and critical impact on patient outcomes and quality of life

