Implementing an Integrative Pre and Post-Operative Educational Intervention for Elderly Patients Undergoing Total Hip and Knee Replacement

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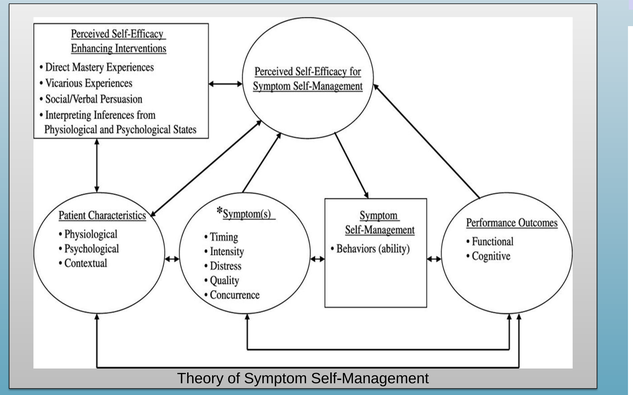
Background

Total hip replacement (THR) and total knee replacement (TKR) are two of the most common elective surgeries in the United States, expected to reach approximately one million per year by the year 2015

Patients undergoing THR or TKR have a median age of 69 in the United States, yet patients over the age of 65 continue to be a minority group in research due to differences in drug metabolizing and learning.

Evidence suggests that a combination of pre-operative and post-operative education using self-management strategies decreases self-reported pain and increases self-efficacy.

Research supports the use of multi-dose interventions and post-discharge calls to support the patient.



Theory of Symptom Self-Management

Purpose

Integrate the site's existing pre-operative education with a evidence-based post-operative educational intervention. Evaluate for long-term feasibility of intervention at site.

Provide study participants with the tools to safely and effectively self-manage post-operative pain.

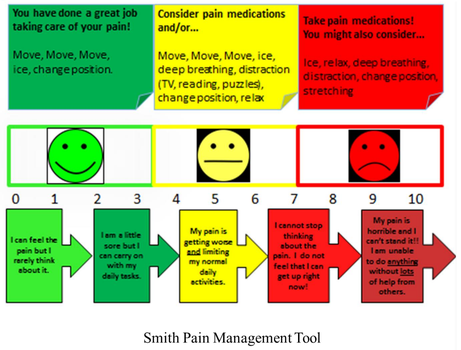
Evaluate pain scores and self-efficacy before and after implementation.

Compare pain scores between intervention group and retrospective comparison group.

Methods

- Participants were recruited at the pre-operative joint camp educational session. Consenting participants were be administered the Pain Self-Efficacy Scale (PSE) and received the Smith Pain Management (SPM) tool.
- The site was a 49 bed community hospital in West Michigan with a 20 bed inpatient medical-surgical unit to which total joint replacement patients were admitted.
- The DNP student met with the patients on each inpatient day, evaluated pain and reviewed self-management techniques with the patient and available family members.
- Individual pain control needs were discussed with staff nurses, physical therapists, and the surge
- Following discharge the patients received follow-up phone calls at 24 and 48 hours to answer any questions and administer the self-efficacy scale.

Tools



Smith Pain Management Tool

The PSE was modified with permission for use in the population.

- Example question:

1. How certain are you that you can decrease your pain quite a bit?

Very uncertain *Very certain*
1 2 3 4 5 6 7 8 9 10

Results

- Pain scores were compared between intervention and comparison groups using an independent samples t-test.

	M Pain Score	SD	***p***	***t***
Comparison	2.92	1.478	0.434	.8
Intervention	2.41	1.505	0.434	.8

  - There was no statistically significant differences in pain scores between the two groups though pain scores were slightly lower overall in the intervention group.

- Self-efficacy was compared to pain scores at each time period using the Pearson correlation coefficient.

Correlations Between Pain scores and PSEQ Scores

	r	*p*
Pre-procedure	-.746	<0.01
24 hours post-discharge	-.542	<0.05
48 hours post-discharge	-.633	<.05

  - These results suggested a negative correlation between self-efficacy scores and pain scores; as self-efficacy scores increased, pain decreased.

- PSEQ scores were compared at each time period using the paired t-test.

Changes in Scores at Each Time Period

	M	SD	*p*	*t*
Pre-Procedure (T1) to 24 hours after discharge (T2)	59.73	8.404	<0.01**	-3.27
T1 to 48 hours after discharge (T3)	68.00	7.714	<0.05*	-2.91
T2 to T3	67.00	3.414	0.93	-0.09

  - A statistically significant difference was seen between the pre-intervention scores and the post-intervention PSEQ scores.

- Average length of time spent with each patient in inpatient education and in follow-up phone calls was evaluated for feasibility in future implementation.
  - The average individual inpatient educational session was 15 minutes and the average post-operative phone call was eight minutes.

Feasibility

The intervention in this pilot project was conducted by the DNP student but was developed in such a way that it could be adapted for use with inpatient nursing staff.

The cost of the intervention was laminating the SPMT tools for patient use at about three dollars per sheet
- Further costs would be incurred were the intervention adapted for use with general nursing staff

These costs would include the time of educating staff nurses and also evaluating the effects of the intervention

Potential for institutional benefit

This intervention addresses nine out of 21 HCAHPS questions; in an institution this size, the survey score of one patient can make a difference in overall HCHAPS scores

This intervention supports the *triple aim* by using a cost-effective strategy to improve the patient experience

The intervention aligns with JCAHO standards for patient education in pain and symptom management
- Pain control is an important factor for evaluation by accrediting bodies such as JCAHO

Strengths

- This intervention was geared toward elderly participants through the use of multi-dose interventions and individualized sessions.
- Each patient was empowered to control his or her own pain
- When appropriate, medication therapy was discussed with the surgeon to meet patient needs

Limitations

- This was a small convenience sample from one community hospital
- The comparison group did not receive the PSEQ
- Pain scores that were documented as "no signs of pain" were averaged in as a zero value and this may have affected average pain scores

Implications for Future Research

- Larger sample sizes and multi-center studies would add stronger evidence in similar studies
- Limit samples to include only the very old (older than 75)
- Further research in this area should continue to focus on empowering the patient to take control of his or her own outcomes