

A Pilot Study Assessing Pain and Health-Related Quality of Life in Women After Cesarean Section

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Background

- Chronic Post-Operative Pain (CPOP)
 - Identified after other abdominal surgeries
 - Potential predictors identified
 - Lack of research studying the cesarean population
 - Unique post-operative role demands
- Cesarean section (c-section)
 - Rate in Canada ~ 26%
 - Special analgesic considerations

Research Objectives

- Feasibility
 - Access
 - Chart Review
 - Online Data Collection
- Hypothesis Development
 - Pain
 - HRQOL
 - Potential predictors

Method

- Design
 - Pilot study
 - Prospective
 - Descriptive
- Population
 - Elective c-section
- Sample
 - Convenience
 - Consecutive

Method (continued)

Data Collection

Timing	Mode	Data
Two Hours Preoperative	-Tablet -Paper	Demographics, pain expectancy, pain, HRQOL, depression, anxiety, and somatization
Acute Postoperative	-Chart Review	Health and obstetrical history, surgical procedure, and pain
Six Weeks Postoperative	-Online -Paper -Telephone	Pain and HRQOL

Analysis

- Feasibility
 - Descriptive analysis
 - Percentages, means, and medians
- Hypothesis Development
 - Data graphed: non-normal distribution
 - Chi Square, Kruskal-Wallis, Wilcoxon Matched Pairs Test, and Spearman's Rank Order Correlation

Sample (N = 41)

- Homogenous
 - Caucasian racial heritage, mean age: 31 years (range 20-42), employed full-time, prior c-section
- Concurrent tubal ligation: n = 12 (31%)
- High Depression Score: n = 10 (24%)
- High State Anxiety Score: n = 9 (22%)
- High Trait Anxiety Score: n = 3 (7%)
- Moderate-Severe Pain Expectancy: n = 5 (12%)

Feasibility Results: Access

- Preoperatively:
 - Recruitment Rate: 2 participants/week
 - Range: 1-8 participants/week
 - Participation Rate: 84%
 - 55 women were eligible, 49 women approached, 41 women consented

- Six Weeks Postoperatively:
 - 10 participants (32%) lost to follow-up
 - 1 participant removed, 9 participants lost to follow-up

Feasibility Results: Chart Review

- Post-Anesthesia Care Unit
 - Lacking pain score: 6 (15%)
 - No or only mild pain reported
- Ward
 - Lacking pain score: 2 (5%)
 - 32 participants (86%) reported at least 1 episode of moderate to severe pain
 - 8 participants (21%) reported moderate pain at time of discharge

Feasibility Results: Online Data Collection

- Provided e-mail address: $n = 34$ (85%)

- Preoperatively:
 - Tablet: $n = 34$ (83%)
 - Paper (preference): $n = 1$ (2%)
 - Paper (no server access): $n = 6$ (15%)

- Six Weeks Postoperatively:
 - Online: $n = 15$ (49%)
 - Paper: $n = 15$ (49%)
 - Telephone: $n = 1$ (3%)

Larger Study Results

Pain

Timing	Reporting Pain	Pain Intensity*	Pain Interference*
	Frequency (%)	Mean (median)	Mean (median)
<u>Preoperative:</u>	17 (42)	3.0 (2.5)	3.6 (3.9)
<u>Six Weeks Postoperative:</u>	7 (23)	2.3 (1.0)	2.6 (1.0)

*Possible scores ranging from 0-10 /10, 0 = no pain

Larger Study Findings

Correlates with Pain at Six Weeks

- Pain in Past 24 hours (yes/no) (BPI-SF)
 - Concurrent tubal ligation ($p = .04$)
 - Preoperative expectation of moderate-severe pain at six weeks ($p = .01$)
 - Reported severe acute postoperative pain ($p = .01$)
- Pain in Past 4 weeks (SF-36)
 - Preoperative somatization score ($p < .01$)
 - Preoperative pain interference score ($p = .03$)
 - Acute postoperative pain ($p = .02$)
- These findings are similar to prior c-section and abdominal surgery studies

Larger Study Findings

Correlates with HRQOL at Six Weeks

- Mental Component Scale (MCS) Score:
 - Preoperative MCS score ($p < .01$)

- Physical Component Scale (PCS) Score:
 - Preoperative pain intensity ($p = .04$)
 - Preoperative pain interference ($p = .03$)

Feasibility Implications

- Elective c-section population is accessible for research
- A multi-site sample may be needed for demographic variability in the sample
- Acute postoperative pain scores on the ward provided a consistent measure of postoperative pain when compared to pain scores recorded in the PACU
- Postoperative online data collection may not be the best method of follow-up after c-section, but may be utilized to collect preoperative data prior to hospital admission
- Follow-up in the c-section population has a high attrition rate; six weeks post-cesarean is not an ideal time for follow-up

Larger Study Implications

■ CPOP

- May be experienced by a proportion of women after c-section
- May reduce HRQOL
- May be modified by preoperative and acute postoperative experiences

Strengths & Limitations

- Limited by small, homogeneous, and convenience sample
- Addressed feasibility issues to guide a larger study's design, including online data collection
- Provided data for future sample size calculations and hypotheses for future study

Research Questions for Future Study

- Is concurrent tubal ligation correlated with postoperative pain outcomes?
- Can postoperative pain outcomes be modified by more detailed preoperative education of what to expect during the acute postoperative period?
- Can improved management of acute postoperative pain modify long-term pain outcomes?

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