Evaluation of Patient Experiences As Part of the Pragmatic Non-Pharmacologic Options in Post-Operative Hospital-Based and Rehabilitation Pain Management (NOHARM) Trial

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AcademyHealth ANNUAL RESEARCH MEETING

RESEARCH OBJECTIVE

- The **N**on-pharmacologic **O**ptions in post-operative **H**ospital-based **A**nd **R**ehabilitation pain **M**anagement (NOHARM) is a pragmatic cluster randomized stepped-wedge clinical trial that seeks to provide surgical patients with high quality multi-modal education on non-pharmacologic options
- The goal is to provide patients with education and support for incorporating non-pharmacologic pain care (NPPC) techniques into their pain management plan to achieve guideline concordant peri-operative pain control
- The intervention consists of a decision support tool automatically sent to patients' online portal pre-operatively that teaches them about 13 NPPC techniques and encourages them to select the three techniques they are most interested in using
- The 13 NPPC techniques included **Movement Techniques**: Walking, Yoga, Tai Chi; **Relaxation Techniques**: Meditation, Relaxed Breathing, Music Listening, Guided Imagery, Muscle Relaxation, Aromatherapy; **Physical Techniques**: Acupressure, Massage, Cold or Heat, TENS
- Clinical Decision Support elements in the electronic health record help peri-operative care teams provide guideline concordant education and reinforcement of the patient's NPPC preferences
- The intervention also consists of educational print and web-based materials and telephone and Zoom-based NPPC support
- We interviewed diverse surgical patients on an ongoing basis to understand their experiences with the intervention and identify opportunities to make iterative improvements to the intervention

POPULATION STUDIED

- The trial includes 32 diverse surgical practices across six hospitals that belong to the the same medical enterprise

Surgical practices were assigned to clusters and clusters were randomly assigned to start the intervention at one of five "steps" every 7 months

- We sought to recruit two patients from each surgical practice about 8-10 weeks after their surgery:
  - One patient with high intervention engagement (e.g., made NPPC selections in their guide pre-operatively **AND** reported NPPC use 1 month post-operatively)
  - One patient with low intervention engagement (e.g., did **not** made NPPC selections in their guide pre-operatively **AND** did **not** NPPC use 1 month post-op)

METHODS

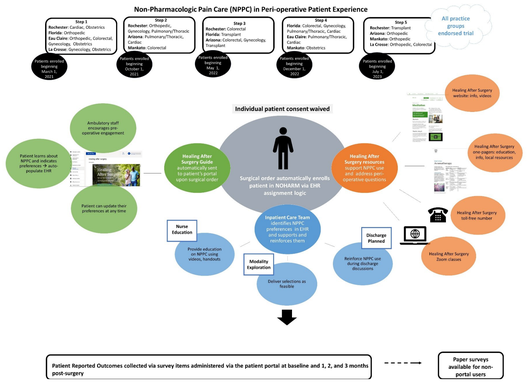
- Two researchers, CT and SR, conducted all interviews
- Interviews were audio-recorded and transcribed
- CT and SR prepared analytic summaries of each interview transcript using a rapid analytic approach[1]
- SR transferred all summaries to a data matrix
- KS and SR independently reviewed summarized content for each domain in the data matrix and drafted an analytic memo
- Consensus about key findings was reached through discussion.

REFERENCES

[1]Hamilton, A., December 2013. Qualitative methods in rapid turn-around health services research. In: VA HSR&D National Cyberseminar Series: Spotlight on Women's Health,. https://www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=780 (accessed 5 April 2019).

[2]Redmond S; Mao Clinic NOHAyRM Research Team; Tilburt J, Cheville A. Non-pharmacological Options in Postoperative Hospital-Based and Rehabilitation Pain Management (NOHARM): Protocol for a Stepped-Wedge Cluster-Randomized Pragmatic Clinical Trial. Pain Ther. 2022 Sep;11(3):1037-1053. doi: 10.1007/s40122-022-00393-x..

STUDY DESIGN[2]



SAMPLE CHARACTERISTICS (N = 24)

Gender of Participants	Male	Female
Full Sample (N = 24)	9	15
Highly Engaged (n = 14)	4	10
Low Engaged (n = 10)	5	5

Age of Participants	Mean	Standard Deviation	Min	Max
Full Sample (N = 24)	53.54 years	18.43 years	24 years	83 years
Highly Engaged (n = 14)	54.71 years	17.46 years	25 years	78 years
Low Engaged (n = 10)	51.90 years	20.56 years	24 years	83 years

Surgery Type	All Patients (N = 24)	Highly Engaged Patients (n = 14)	Low Engaged Patients (n= 10)
Cardiac	3	2	1
Colorectal	3	1	2
C-section	1	1	---
Gyn	8	5	3
Lung	3	2	1
Ortho	6	3	3

PRINCIPAL FINDINGS

- Both patients who demonstrated high and low engagement with the intervention thought favorably of NPPC.
  Interviewer: What are your thoughts in general about non-medication ways of managing pain?
  P18 (low engaged): I-I am all for it, and I-I believe that should be part or offered to every patient, surgical or non-surgical.

  P16 (highly engaged): I do everything I can to avoid medication. I mean, even, um, Tylenol, ibuprofen, I do not take those even when I-I gave birth to my daughter…I just don't-don't like that, so given the, you know, the options of how to recover from surgery without medication, I mean, that's-that's right in alignment with [laughter], you know, my-my thoughts, so that was good.

- Some lower engaged patients, who did not self-report using NPPC on portal-based surveys, discussed using NPPC techniques post-operatively.
  Interviewer: Was there anything else that you used to manage your pain?
  *P26 (low engaged): Um, no. Not really. Like, yeah. That-that was it. Like, **I-I iced a lot**.*
  *P26 (low engaged): And I-I made sure that **I was up and moving** around and not sitting too much--*

- Those who were highly engaged had more familiarity with NPPC and recalled more pre-op and inpatient discussions with their care teams and receipt of handouts.
  P6 (highly engaged): I-I meditated when I was in college, you know, 50 years ago, and, uh, I took a meditation, uh, seminar, and I've used it over the years. I don't use it on a daily basis or whatever, but it is helpful at times.

- Those with lower engagement tended to not remember receiving portal-based materials or handouts, and conversations with their care team both pre-operatively and during the inpatient stay were less common.
  P9 (low engaged): Um, I—because I don't recall being approached about it, um, that would be my first thing is that-that you, um, make sure that people are aware that, uh, there is, uh, someone that they can go to, uh, to help with the pain without taking medication. I just don't remember anyone sayin' anything to me. But then, um, I had the surgery on Thursday, and, um, I went home on Friday. So, um, there wasn't a lot of time for anybody to be coming in and-and, uh, talking with me.

- Both groups noted that there was opportunity for more personalized discussions about NPPC from their care team.
  P20 (highly engaged): My recommendation would be to actually spend more time going over what to expect, not just off-handedly saying, "Well, this will be the best for you," or, "This might be the best for you." Actually spend time talking to the person so that they understand the pros and cons, instead of just, "You choose this, or you choose—you choose something, and that's what you do." There should be more of an opportunity to discuss the ramifications of the different types of pain management.

CONCLUSION

- Interviews revealed the following opportunities to improve the intervention

Opportunity for Improvement	What we did
Calling more attention to portal materials	Began mailing print materials to all patients to help them prepare for peri-operative NPPC use and inform them of portal-based materials
More routine distribution of handouts by care teams	Bundled individual patient handouts into a workbook to facilitate care team distribution
More care team discussions about NPPC	Streamlined existing Education Points built into the electronic health record (from many points to four points) to help care teams discuss key topics related to NPPC with patients

- Opportunities remain for encouraging care teams to personalize discussions about NPPC with patients

IMPLICATIONS FOR POLICY AND PRACTICE

- Because we conducted patient interviews while the trial was ongoing and rapidly analyzed the transcripts, we were able to identify opportunities for improving the delivery of the intervention to fit patient needs in a timely manner
- Modifications targeted the delivery of the intervention, but not the content (e.g., no changes were made to the 13 NPPC patients could choose from; and education offerings, e.g., print, video, and telephonic resources, remained available to patients), preserving intervention fidelity
- By making these modifications to intervention delivery during the trial, we will be able test the effectiveness of these adaptations at trial completion by performing stepwise comparisons, with implications for how to best implement this intervention long-term
- Findings also suggest that more systematically introducing patients to non-pharmacologic modalities (for pain management or more general wellness) prior to a surgical event may help familiarize patients with these options and normalize their use,

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