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Commentary

"Prehab"—Protocol for a structured educational program delivered prior to intensive interdisciplinary pain treatment

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Intensive interdisciplinary pain treatment (IIPT) for youth with persistent pain and related impairment focuses on improving function and quality of life through collaboration on shared treatment goals by a team of at least three disciplines (Claus et al., 2022). Research on IIPT demonstrates significant improvements in physical functioning and psychological wellbeing (Logan et al., 2012), health-related quality of life for patients and their family members (Campanile et al., 2024) and sustained reductions in pain (Campanile et al, 2024; Simons et al., 2018). In a study examining the short- and long-term trajectories of IIPT patients, preadmission readiness to change was identified as a robust modifiable predictor of improvement (Simons et al., 2018). However, an earlier study found that the greatest percentage (48%) of adolescents seen for an initial multidisciplinary evaluation in a tertiary pediatric pain clinic were in the *precontemplation* stage of change, suggesting that nearly half of this group were not ready to take a multidisciplinary self-management approach to their pain (Guite et al., 2014). Taken together, these studies suggest that there may be opportunities to enhance readiness to change after patients are first seen in pain clinic, and before they complete a course of IIPT.

One strategy to enhance readiness for change is prehabilitation, or "prehab," a pre-treatment approach developed within surgical subspecialties. Prehab encompasses multimodal interventions to improve postoperative recovery and outcomes by preoperatively enhancing patient preparedness (Banugo & Amoaka, 2017; Kann et al., 2025). Prehab programs intervene on lifestyle and behavioral risk factors of suboptimal post-surgical recovery (e.g., physical fitness, psychological wellbeing; Durrand et al., 2016). Prehab approaches are effective in improving postoperative physical function in adults (Kann et al., 2025) and decreasing length of postoperative hospitalization in children (Brady et al., 2021).

Prehab has been limitedly examined in pediatric IIPT. One program targeted readiness for change through delivery of a group-based motivational interviewing prehab protocol delivered via telehealth (Smith & Logan, 2022). Readiness for change and program engagement increased following prehab, but associations between increased readiness and IIPT outcomes were not examined (e.g., functional disability, pain intensity; Smith & Logan, 2022).

Expanding on this work to optimize patient readiness for IIPT, we designed a new prehab protocol. This commentary describes protocol development and provides a roadmap for implementation of similar prehab programs to the IIPT community.

Prehab Protocol

The prehab protocol consisted of four one-hour didactic sessions delivered weekly over one month to a group of patients prior to IIPT admission. Sessions were co-delivered via Zoom by interdisciplinary team members, including an occupational therapist (OT), physical therapist (PT), nurse practitioner (NP), and psychologist. Each session included didactic material with visual aids delivered via online slideshow developed by the treatment team. Leaders facilitated active discussion and engagement between patients, including the use of games (e.g., True/False quiz). At the end of each session, patients wrote down a "pearl of wisdom" and a functional goal related to covered material, which patients were encouraged to work on between sessions.

Prehab session content is described below. Content was created collaboratively by the interdisciplinary team based on topics related to their clinical expertise and knowledge of areas that patients frequently struggle with upon program admission. It was a specific goal of the team to include a range of topics that mirrored the experience of pain rehabilitation and to align with past prehab work in surgical (e.g., healthy habits) and IIPT (e.g., goals/values) populations. The course structure was informed by what was feasible in a similar IIPT prehab program in terms of telehealth delivery, number of sessions, and length of sessions (Smith & Logan, 2022). The order of delivery was largely determined by availability of team members (who were actively treating other patients in the program), with healthy habits prioritized first in order to provide the longest timeframe to work towards improvement in those areas prior to program admission.

Healthy Habits

Co-delivered by the NP and OT, this session covered sleep hygiene and nutrition within the context of chronic pain management. Sleep education focused on the relationship between pain and sleep, the importance of consistent nighttime routines, and overviewed good sleep hygiene habits (Oh et al., 2023). Nutrition content focused on eating three meals a day with at least five servings of fruits and vegetables (Maddox et al., 2023). Patients were advised to prioritize hydration (64 ounces of water daily) to support digestion and benefit pain/overall health (Holynska-Iwan et al., 2021).

Pain Neuroscience Education

This session was co-delivered by an OT and PT, beginning with an interactive 12-question true/false quiz using material from Adriaan Louw's "Why you hurt" resource (2014). Concepts included: the brain decides when pain occurs, pain is impacted by environment and stress, and pain problems and tissue injuries are separate in chronic pain situations (i.e., pain can occur with no injury, and people can experience injury without pain). Real life examples of each concept were discussed.

Values Clarification and S.M.A.R.T. Goal Setting

Delivered by two pain psychologists, this session focused on values clarification and goal setting using S.M.A.R.T. goals (i.e., Specific, Measurable, Achievable, Realistic, Timely; Doran, 1981). First, definitions of "values" and "goals" were reviewed. The importance of setting value-based goals to increase motivation was reviewed, as well as how to use the SMART goal framework to set realistic and achievable goals. Patients then set SMART goals to work on during the program, including discussion of barriers to achieving goals and potential solutions.

Pacing for Function

The final session was delivered by a PT and pain psychologist and focused on activity pacing. Providers reviewed two unhelpful cycles often present in patients with chronic pain: boom-bust and activity avoidance. "Boom-bust" cycles happen when patients engage heavily in activity when symptoms are low or tolerable, which results in symptom exacerbation post activity (Jamieson-Lega, Berry, & Brown, 2013). "Activity avoidance" cycles occur when patients discontinue activities that increase pain or are perceived to potentially increase pain. The "just right challenge" was introduced, an approach based in graded activity exposure focused on gradually increasing activity over time to avoid "boom-bust" and "activity avoidance." Providers and patients collaboratively developed individualized approaches to pacing in self-selected

areas of function (e.g., physical activity, academic engagement) and discussed the role of IIPT in supporting achieving developed plans.

Roadmap to Implementation

Prehab has the potential to increase foundational knowledge and readiness for participation in IIPT (Smith & Logan, 2022). This prehab protocol was delivered to two cohorts of patients prior to IIPT program admission. Lessons learned focus on logistical factors pertinent to other IIPT programs developing similar prehab interventions.

First, the prehab protocol was based on content typically delivered in IIPT. This continuity alleviated the burden of content development on providers, who drew from known concepts and materials. This connection also facilitated quick review of the material upon admission with patients and allowed providers to go into greater depth on certain topics earlier on. Second, prehab sessions took place during regular IIPT program hours, requiring only minor staffing adjustments and no change to active IIPT patient schedules. Other IIPT programs are encouraged to consider the timing of prehab programming to not detract from programming for active patients or overburden from extending staff hours.

Third, this prehab protocol was delivered in a cohort model (vs rolling admission). A structured, didactic format may lend itself to greater flexibility for use with either a cohort or rolling-admissions model. It would be important to ensure that the material covered in each session is distinct and does not rely on prior sessions. For example, in this prehab protocol, sessions started with a brief review of the content and goals from the previous week, which would not be feasible in a rolling admission format. However, a less interdependent structure would allow rolling-admissions models to have patients attend the first available prehab class as soon as they are accepted for admission. This would allow patients to immediately engage in prehab, as opposed to having to wait until the next cycle, which could delay IIPT admission.

While each IIPT program has unique factors, hopefully the lessons learned in developing and implementing this prehab protocol are useful for other programs. As IIPT programs continue to develop, evaluating methods for enhancing patient outcomes is crucial. Future studies should incorporate patient and provider feedback in reviewing prehab experiences and systematically test the impact of such experiences on program outcomes. Prehab is a promising tool to improve patient readiness, engagement, and treatment outcomes for patients undergoing IIPT for chronic pain.

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