MIPAIN
Michigan Pediatric Adolescent Interdisciplinary Network
What we will not be covering...
What We Will Be Covering:

- Brief overview of chronic pain disorders
- History of our program
- Importance of a multidisciplinary approach
- OT’s role
- OT Evaluation
- OT Treatment
- Preliminary results since October 2017
- Collaboration with other programs around the country
Pediatric Chronic Pain Epidemiology

What causes the abnormal pain response/reflex?

https://www.chop.edu/conditions-diseases/amplified-musculoskeletal-pain-syndrome-amps
“Although it is a complex problem, chronic pain has surprisingly nonspecific definition. Chronic pain refers to pain that has lasted for at least 3 or 6 months” \(^1\) (p.3).

“Chronic pain is very common. Studies show that about 25% of children and teenagers (that is, 1 in 4) have some type of problem with chronic pain” \(^1\) (p.4).

[1] “The most common types of pain that children experience are head pain, abdominal pain, and musculoskeletal pain. More girls than boys have chronic pain, especially after puberty. The peak age at which chronic pain is reported in childhood is ages 14-15 years.” p. 4
Pediatric Chronic Pain Epidemiology

- 10-20% from injury
- In at least 80% of children with amplified pain syndrome, psychological factors seem to play a role
- “illness is an infrequent cause of amplified pain syndrome. Most commonly it is seen in conjunction with inflammatory illnesses of the musculoskeletal system such as arthritis, tendinitis, myositis or enthesitis. “
- According to AMP - A Guide for Families - 80% of children with AMP are girls.
Common Chronic Pain Diagnoses

- Amplified pain syndrome
- Complex regional pain syndrome
- Fibromyalgia
- Somatoform disorder/conversion disorder
Increased Pain Incidence In Mott Ambulatory Care
[2] “Chronic pain is a multifaceted epidemic that encompasses many different diagnoses and requires multimodal management (NIH Interagency Pain Research Coordinating Committee, 2016)
Meet Our Team

Art Therapy
  Julie Moreno
PM&R Physician
  Rita Ayyangar, Cristina Sanders
Physical Therapy
  Beth Riske, Amanda Hughes, Kim Walainis
Psychology
  Eric Scott, Emily Foxen-Craft
Therapeutic Recreation
  Becky McVey
Occupational Therapy
  Joe Latocki
Disciplines Involved

Psychology

• Enhance coping skills to more effectively manage pain.
• Assess and provide intervention related to the emotional consequences of pain\textsuperscript{13}.
Disciplines Involved

Physical Therapy

• While pain is acknowledged, it is not emphasized during individual or group therapy.
• Teach the client how to use movement and exercise to modulate pain.
• Aerobic/Strengthening/Balance/Coordination
• Provide individualized home exercise programs to clients, with a weekly progression increasing the amount of activity the client engages in.
• Clients are offered choice in exercise selection\textsuperscript{13}. 
Disciplines Involved

Recreational Therapy

• Leisure Awareness
  - Breaking leisure activities down into components (i.e. social, cognitive, physical, emotional)
• Leisure Participation
  - Includes cards, games, cooking/baking, arts and crafts
• Community Re-Integration
  - Exploring new leisure activities
  - Non-competitive leisure engagement
• Benefits include:
  - Coping strategies
  - Social resources
  - Learn to hold each other accountable
• Patient driven goal setting
• Pain is not emphasized\textsuperscript{13}
Disciplines Involved

Art Therapy

- Goals are accomplished through a variety of mediums and the creative process.
- Goals
  - Improved self-concept
  - Management of anxiety
  - Socialization
  - Expression of oneself
  - Improve a client’s functioning & sense of personal well-being
  - Increase self-esteem¹³
OT’s Unique Role

Occupational therapy is represented in some reviews of interdisciplinary pain programs; however, physical therapy and psychology are more commonly identified professions. ⁹
What is the unique role OT plays on this interdisciplinary team?
Widespread Impact Of Chronic Pain (Bursch et al)

Ot Evaluation

Co-eval vs. individual
Clues to amplified pain from the history and physical examination:

- Pre-to adolescent girl (80%)
- Increasing pain after minor trauma
- Marked disability
- Crawls around house or up stairs
- Unable to bear light touch, clothing, or bedcovers
- May have symptoms of autonomic changes: cold, color changes, clammy, edema
- Worse or no better with splint or cast
- Failed prior therapy
- High level athlete

Clues to amplified pain from the history and physical examination:

- Typical personality: mature, excels at school and extra-curricular activities, perfectionistic, pleaser
- Role model for chronic pain or a similar pain
- Recent major life event
- Mother acts as spokesperson
- Child is mature beyond years
- Incongruent affect for amount of pain reported
- *La belle* indifference towards disability & pain
- Compliant regardless of reported disability & pain
- Autonomic signs, especially after use
- Allodynia with a variable border
Clues to amplified pain from the history and physical examination:

Pain is not along a dermatome
Pain is not in the distribution of a peripheral nerve
Otherwise normal neurological examination
“Self-care performance are frequently disrupted or altered because of chronic pain” (Breivik et al., 2006; Henricksson, 1995; Müllersdorf, 2002).
IADL’S

![Weekly Chores Chart](image)

<table>
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<td>Get dressed</td>
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<td>Make my bed</td>
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<td>Pick up toys</td>
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<td>Do my homework</td>
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<td>Take out garbage</td>
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<tr>
<td>Eat vegetables</td>
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<td>Take a bath</td>
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<td></td>
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<td>Put clothes in hamper</td>
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Standardized Assessments

The QuickDASH Outcome Measure

• Upon evaluation, patients are screened for any upper extremity pain that may impact their daily occupations.
  o If any symptoms in the upper extremity impact a patient’s ability to perform a task, they are provided the complete QuickDASH.
• Assessment completed at evaluation and at the end of the MiPain program.
• This assessment is widely used in chronic pain programs and research studies related to chronic pain\textsuperscript{14}.
• Overall, data collection shows that patients exit with decreased symptoms in their upper extremity impacting their functioning during daily tasks.
Standardized Assessments

Allodynia Hypersensitivity Scale

• After researching previously used tactile assessments and discussing with other programs their process of assessing tactile hypersensitivity, the MiPain program was unable to find a currently established, effective measurement.

• The creation of an Allodynia and Hypersensitivity Scale was created to meet the needs of the MiPain program.
  o Patients are screened upon evaluation to identify any hypersensitivity to tactile stimulation.
  o If hypersensitivity is identified, the full scale is completed.
  o Implemented using a standardized protocol: items tested in the same order, for the same duration, and the same number of times for each patient.

• Assessment completed at evaluation and at the end of the MiPain program.
• Overall, data collection shows that patients exit with reduced tactile hypersensitivity.
### Allodynia Hypersensitivity Scale

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<th>DATE</th>
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<th>deep pressure</th>
<th>brushing</th>
<th>towel rubbing</th>
<th>vibration</th>
<th>cold temperature</th>
<th>Repeated stimulation (pencil tapping)</th>
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Grip & Pinch

- Completed using a dynamometer and pinch gauge meter.
- All patients evaluated for the MiPain program complete this assessment.
- Normative assessment: compare the patient to a population of the same gender and within 2 years of age.
- Overall, data collection shows that patients exit the program with increased grip and pinch strength.
Intervention Strategies

MiPAIN program:
- 3 days a week
- 3 weeks
- 9am - 3pm
- 1 session cancelation policy

Occupational therapy frequency:
- 3 sixty minute sessions a week
  - \( \frac{2}{3} \) group of 4 format. \( \frac{1}{3} \) group of 2 format.
Intervention Strategies

Moreover, many studies have indicated that occupation has the potential to mediate the pain experience. Neville-Jan (2003) ¹⁰

Chronic pain significantly disrupts occupational performance (Breivik et al., 2006), and research has suggested that engaging in occupation has the potential to mediate the pain experience and to alter biological, psychological, and social factors that are known to influence the pain experience. ¹⁰
Intervention Strategies

OT Binder materials: Week/Phase 1-3
Desensitization

• 10-15 minutes of desensitization to the affected area(s) each day
• vary the stimulus each day
Intervention Strategies

Meal Planning Activity

• Tour the kitchen to see what they have access to during their meal preparation session.
• Plan a cooking activity under a $____ budget ($5 per patient). Remind the patient they are each responsible for bringing in $5 for week 3 grocery shopping trip.
Intervention Strategies

Grocery shopping

- budget
- functional mobility
- team work - compromise
- problem solving
Intervention Strategies

Meal preparation

- sequencing
- managing stress
- team work
- safety
- hygiene
- standing tolerance
Intervention Strategies

IADL training
- Pick weeds outside
- Wash mirrors
- Wash door windows
- Empty out trash cans
- Vacuum
- Shovel snow
- Cleaning shower in ADL bathroom
- Clean staff kitchen
- Wash windows
- Fold towels
- Sort the silverware drawer
- Sweep
Intervention Strategies

Classroom Scenario & Jeopardy!

https://www.playfactile.com/edit/mipain1
Intervention Strategies

Resistance Circuit training

- Focus on upper body strengthening
- Many have weak/gip scores
- body mechanics
- exercise pain vs. injury pain
Outcome Findings

Allodynia findings (23 patients)
- Average decrease of 11.6 points from time of initial evaluation till 3rd week of MiPAIN program
- High 47 point drop. Low 4 point increase.

Quickdash findings (11 patients)
- Average decrease of 21 points from time of initial evaluation till 3rd week of MiPAIN program
- High 46 point drop. Low 2 point drop.
Chronic Pain Programs Across the Country

- Disciplines involved vary
- While many programs exist, some are more known than others.
  - Pediatric Pain Rehabilitation Program, Cleveland, OH
  - Children’s Hospital of Philadelphia (CHOP), Philadelphia, PA
    - Intense inpatient program for children with chronic pain.
    - Also provide an outpatient program as well.
- Participant ages vary from birth to early adulthood\(^\text{12}\).
MiPain Collaboration with Similar Programs

• Children’s Specialized Hospital, Chronic Pain Program
  o New Brunswick, NJ
  o Disciplines involved: OT, PT, psychology, and Child Life.
  o Program format:
    ▪ Outpatient
    ▪ Inpatient
(J. Merrick, personal communication, 2018)

• SRALAB’s Pain Management Center
  o Chicago, IL
  o Program format:
    o Outpatient
    o Patients seen 1x/wk for individual therapy, 1x/wk for group treatment.
(A. Ovaska-Weber, personal communication, 2018)

• Pediatric Pain Rehabilitation Program at Cleveland Clinic
  o Cleveland, OH
  o Disciplines involved: OT, PT, recreational therapy, psychology, educator.
  o Program format:
    o Group and individual session daily, Monday-Friday.
    o 3 weeks in duration (ideally, the first 1-2 weeks are inpatient).
(G. Banez, personal communication, 2018)
Mipain Future

- Always growing and always learning
- Team collaboration
- Learning from other institutions
Reference List


Reference List


MIPAIN Website:

https://www.mottchildren.org/conditions-treatments/ped-chronic-pain
MiPAIN QUESTIONS?