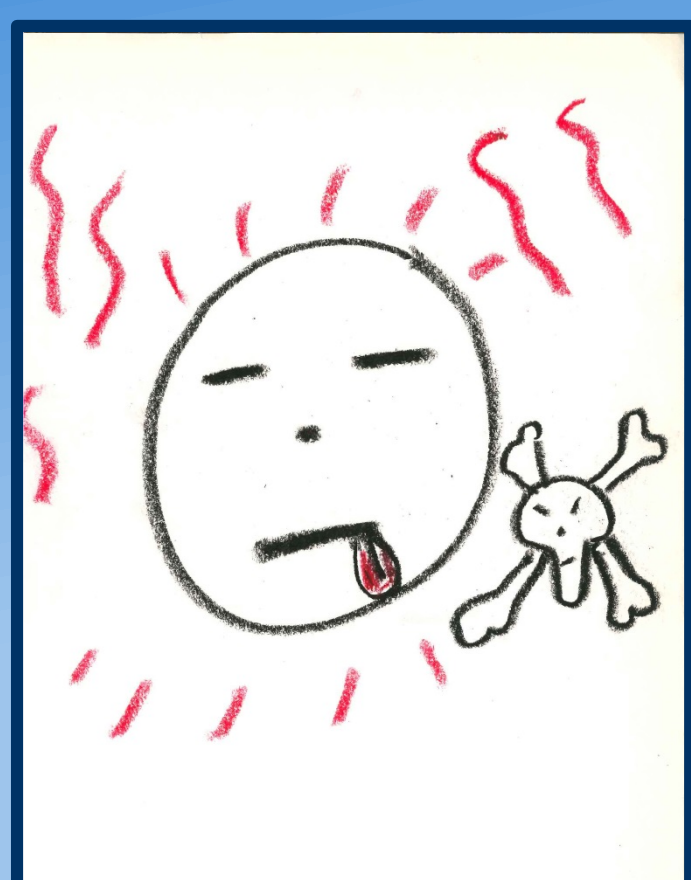
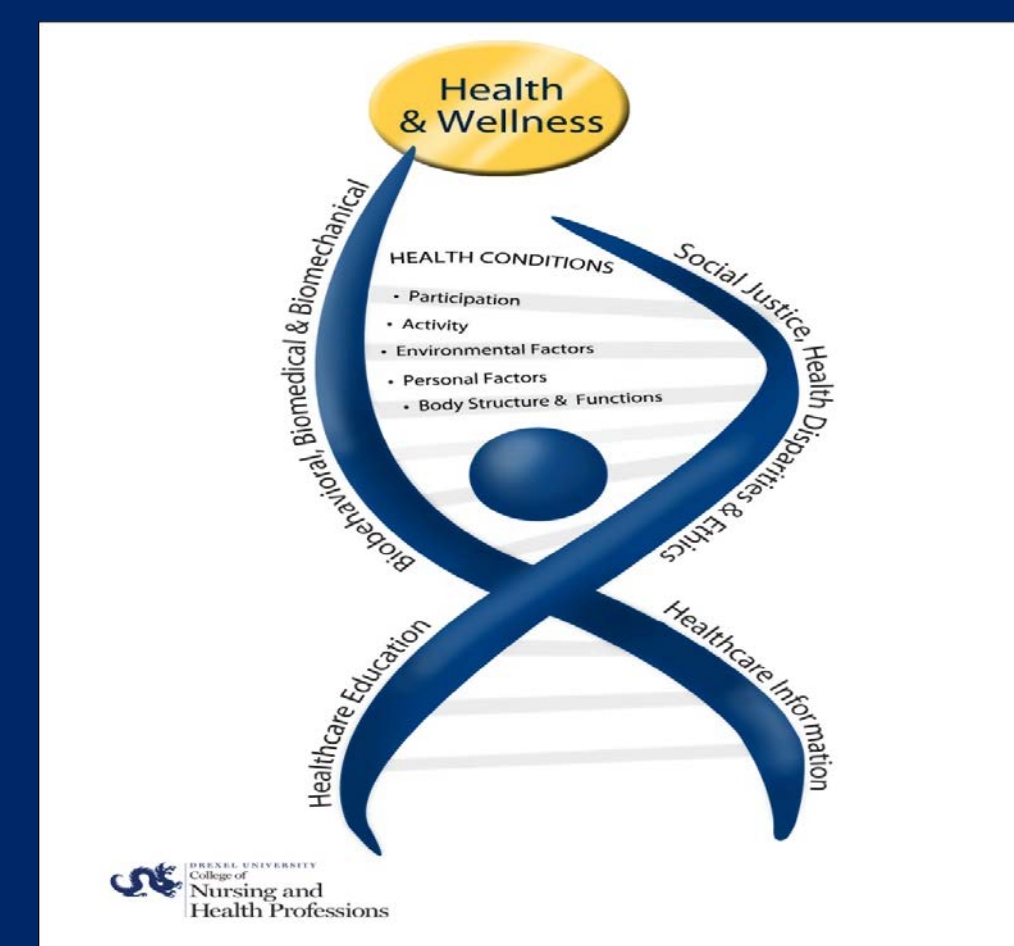




Collaborative Approach to Addressing Risk Factors for Development of Persistent Pain: A Case Study

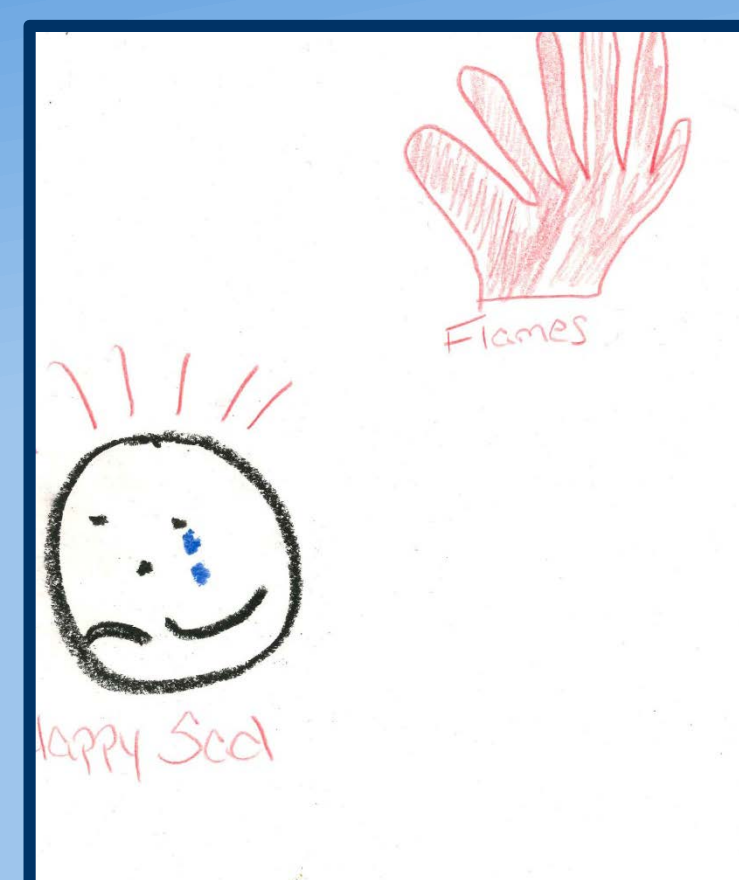
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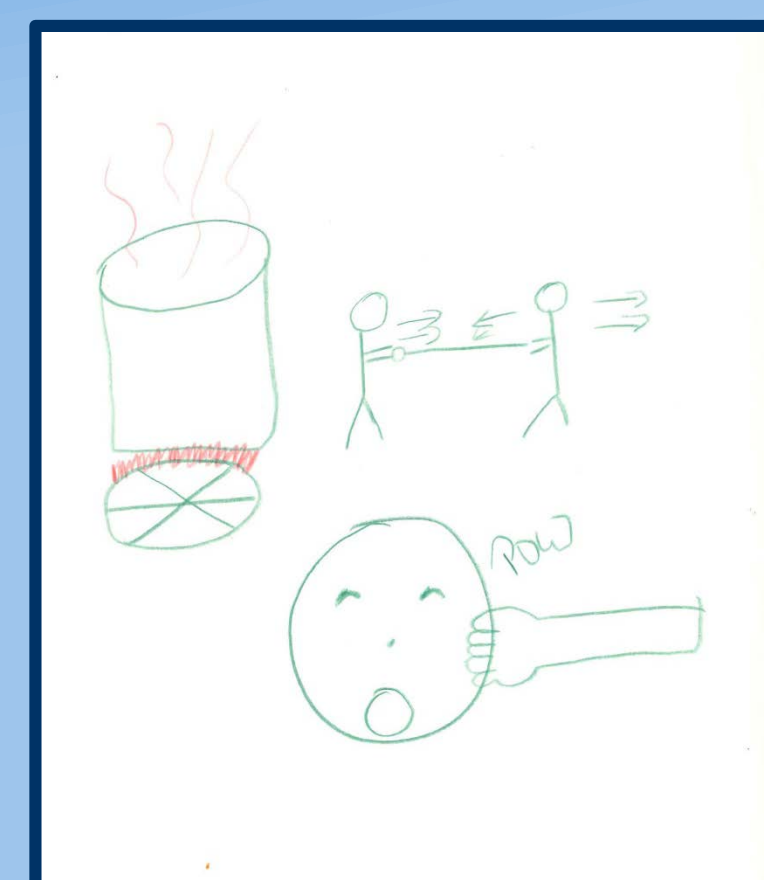
Week 1, Pain score = 5.5

- Red & black
 - Typical in pain representation
- Lack of containment
 - Overwhelmed
 - Out of control



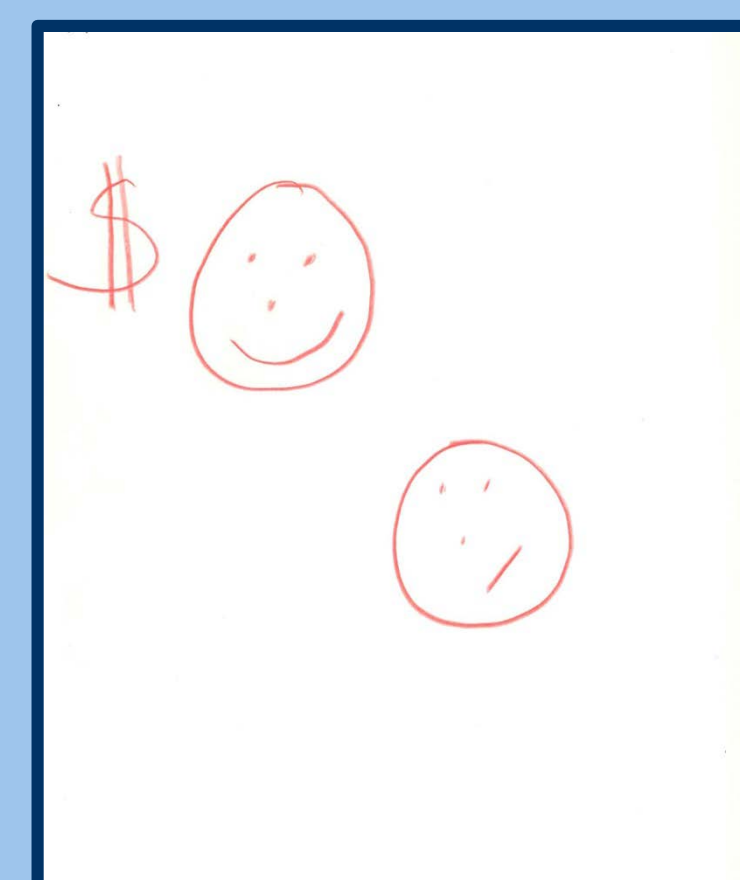
Week 2, Pain score = 7.0

- Red & black, but introduces new color
 - Shift in emotions
 - Anger → Sadness
- Colored pencil and more containment
 - More control
- Ambivalence
 - "Sad about pain"
 - "Happy able to do more"



Week 4, Pain score = 4.2

- Predominantly green
 - Less intense emotions around the pain
- Colored pencil
 - More control
- Described and depicted pain as coming in "waves"
 - More manageable
- Brighter affect



Week 6, Pain score = 3.2

- Back to predominantly red
 - Ambivalence, also seen in content
- Shift in stress
 - Physical pain → financial & emotional implications, including not working and being perceived as "lazy"



Week 7, Pain score = 2.2

- Predominantly red
 - Ambivalence, also seen in content
- Shift around finances
 - Source of stress → source of motivation
- Shift in perception of success/progress
 - End goal → small steps



Week 9, Pain score = 2.9

- External stress of new moving to home
 - Increase in pain
- Eager to get back to work
- Discussed learned coping skills for managing pain

Decision Making Model

Clinical Reasoning Model for Persistent Pain

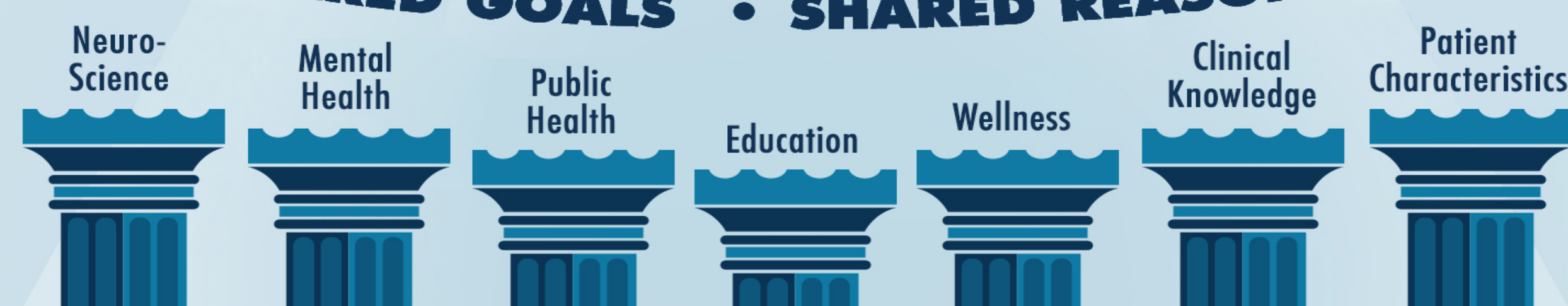


Self Managing Patient
Healthcare Team
Serves as Consultants

SHARED PLAN OF CARE

PATIENT • PT/REHAB • BEHAVIORAL HEALTH • 1° CARE • COMPLEMENTARY SERVICES • SPECIALISTS

SHARED GOALS • SHARED REASONING



Shared Reasoning, Goals, POC

Patient description

- The patient was a 33 year old female who presented with severe lateral ankle and foot pain after sustaining an inversion ankle sprain 2 weeks prior. Her pain at worst was 9/10, at best 8/10, and it was 8/10 when she was seen in the clinic. She was initially in a brace and non-weight bearing. Based on her subjective reports, functional status, objective findings, social history and catastrophizing beliefs about her injury, we were concerned that she was at risk for developing persistent pain.
 - Risks for developing persistent pain: ACE score of 5, increased stress/anxiety associated with loss of work since injury, hypervigilance, pain catastrophizing, poor activity regulation, fear of activity, concern about long term outcome

Emphasis on collaborative care

- Physical and art therapy worked closely together to create a POC and select an effective approach to patient engagement
- Art therapy provided valuable information about the patient's experience of her pain, as well as her psychological and emotional well-being

Goals

- Improve function in ADLs (e.g. walking up and down the stairs with laundry)
 - Walk further without AD
 - Return to work
 - Become independent with pacing and symptom management
 - Gain understanding of persistent pain and self management techniques
 - Develop healthy skills for coping with the pain and a shift in perspective towards patience and motivation
 - Feel empowered to control the pain experience
- Plan of Care
 - Gradually return to prior level of function
 - Emphasize patient education via discussion, problem solving and structured feedback
 - Foster an active patient role
 - Use pain drawings to depict experience of the pain from week to week, creating an empowering narrative
 - Address impairments through:
 - Gradual strengthening and stretching program
 - Progressive weight bearing
 - Balance exercises

Discussion/Reflection

Benefits of collaborative care

- Better coordinated care with improved patient experience and outcomes
- Supportive environment for patient and practitioners
- Improved understanding of other disciplines
- Value of thinking about pain from alternative perspectives
 - "Looking at her pictures gave me an appreciation for the distress that she was experiencing, which helped to guide me down a treatment path emphasizing more patient education on pain neuroscience instead of solely focusing on her impairments (strength, ROM, etc.)."
- A clearer picture of how physical and mental health simultaneously affect one another

Potential barriers for collaborative care

- Availability and proximity of other clinicians
- Communication
 - Busy clinical schedules
 - Differing clinical language
- Differing emphasis on goals (i.e. mental vs. physical)

How this experience influenced us as clinicians

- Higher value placed on collaborative care and open communication
 - Each discipline provided valuable input
 - Improved outcomes were well worth the extra time spent on collaboration and communication
- Increased desire to work collaboratively in the future

Pillars

- Neuroscience**
 - Persistent pain is characterized by complex and diffuse neuroplastic changes¹
 - Neuroplastic changes associated with chronic stress lay a foundation for persistent pain²
 - Emphasis on pain free movements and HEP to gain locus of control over pain³
 - Signs of Sensitization^{4,5}
 - Poor tolerance to exam
 - Pain out of proportion to stress applied to tissue
 - Sensitivity in areas not affected by injury, spreading of pain
- Mental Health**
 - Individuals with persistent pain who have high resilience demonstrate more effective coping skills, more positive attitudes and better health care utilization⁶
 - Art provides a vehicle for externalization of pain⁷
 - Low satisfaction with life, higher levels of perceived stress, depressive symptoms, sleep disruption, and diminished QOL are risk factors for persistent pain⁸
- Public Health**
 - ACE score is a dose dependent risk factor for persistent pain⁹
 - Persistent pain is influenced by social and cultural factors⁹
 - Smoking, nutrition, alcohol consumption, physical activity and weight loss are associated with the development of chronic disease worldwide¹⁰
- Education**
 - Pts fail to recall between 1/3 to 1/2 of statements made by physicians¹¹
 - Adherence to POC is improved by concordance, cooperation and partnership¹²
 - To improve learning:
 - Consider teaching and learning styles¹²
 - Use repeated practice with feedback¹²
 - Assess and address barriers to behavior change¹²
 - Teach problem solving skills¹²
- Wellness**
 - Psychological factors, such as anxiety, fear avoidance and catastrophizing, impact pain¹³
 - A variety of complementary therapies are an effective part of persistent pain management¹⁴
- Clinical**
 - Multidisciplinary approaches to pain treatment have been associated with improved outcomes¹⁵
 - Pain beliefs and fear avoidance influence pain levels^{16,17}
 - Best practice for lateral ankle sprains¹⁸
 - Joint mobilization to improve ROM and decrease pain during therapeutic ex¹⁹
- Patient Characteristics**
 - Delayed recovery time
 - ACE score = 5/10
 - Dependent children at home without other support
 - Unable to work
 - High levels of stress and anxiety
 - Pain outside of expected distribution
 - High pain ratings
 - Felt overwhelmed and fearful of poor prognosis/outcome
 - Concerned about being perceived as lazy, pushed herself to work through pain
 - Initial focus solely on final outcome unable to conceptualize smaller steps necessary to achieve goals

Patient Outcomes

	ROM/MMT	Patient Specific Functional Scale	Work/ADL status	Emotion/Attitude	Beliefs	Education
Initial Evaluation	DF: 10° hypo/2- PF: 40° / 2- Inv: 8° / 2- Ev: 10° / 2-	0/10	Not working, significant difficulties with ADLs, fatigues quickly	Overwhelmed, angry, anxious	Fearful of movement and exercise, unwilling to weight bear	Little knowledge of diagnosis, no knowledge of persistent pain, unable to predict or control symptoms
Re-evaluation	DF: 10° / 4 PF: 40° / 3- Inv: 30° / 4 Ev: 35° / 3+	6/10	Not working, difficulty with ADLs and feels she does not walk normally	Encouraged, ambivalent, hopeful	Fearful of exercise, but believes the treatment is helping	Improved knowledge about healthy lifestyle, pacing, ankle sprains and central sensitization
Discharge	DF: 17°/5 PF: NT/5 Inv: NT/5 Ev: NT/5	8.67/10	Returned to work, no significant difficulties with ADLs or gait	Motivated, empowered	Feels movement and exercise are helpful because she understands how to perform them safely	Independent with symptom management, pacing, and prevention



Red letters = pain with testing
MMT grades out of 5
NT=not tested

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