Understanding the Pain-Stress Cycle

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Specializing in Chronic Pain and Stress Management

Pain: Definition
- By definition is "an unpleasant sensory and emotional experience"
- But why?

Psychological Effects of Pain: Ripple Effect

Chronic Pain as Epidemic
- 10-30% Americans have chronic pain
- $150 billion spent on healthcare
- ½ million lost work days
- APS estimates 1:4 receive proper care

Physiologic and Behavioral Responses to Acute and Chronic Pain

<table>
<thead>
<tr>
<th>Acute Pain</th>
<th>Physiologic Resp.</th>
<th>Behavioral Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inc. BP, R, P, Dilated Pupils Perspiration</td>
<td>Restlessness, Poor Concentration, Apprehension, Distress</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chronic Pain</th>
<th>Physiologic</th>
<th>Behavioral Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal BP, P, R Normal Pupils Dry skin</td>
<td>Immobility, Physical inactivity, Anticipatory fear, Withdrawal Suffering</td>
</tr>
</tbody>
</table>

Differentiating Acute and Chronic Pain

- **Acute**
  - New
  - Different
  - Diagnose
  - Treat
  - Goes Away

- **Chronic**
  - Old
  - Same
  - Assess/Monitor
  - Manage
  - Does not go away
Stress and Pain

Stressors
- All Emotion (+ and -)
- Change
- Loss
- Time
- Money

Symptom Management Tools
- Knowledge & Awareness
- Relaxation
- Communication Skills
- Pacing
- Humor
- Diet
- Rest
- Love

Symptom Management
- Medication
  - Blocks/Surgery/Injections/SCS/Pumps
- Diet/Nutrition
- Exercise Program
- Physical Therapy
- Occupational Therapy

Common 4
Sad, Mad, Fear, Guilt
- Depression:
  - Amplifies pain experience
  - Shared neurotransmitters: serotonin, norepinephrine, Substance P, higher pain intensity pos. correlation to disability and depression, assoc with lower self-efficacy
  - 3-4Xs the general pop; 2-3 xs more likely to attempt or complete suicide
  - 30% pts with persistent pain report depression
  - 40-60% pts at pain clinics report depression
  - Report less pain when depression improves

Chicken and Egg
- Growing evidence supports conclusion pain precedes rather than follows development of depression
- Intensity, frequency, number painful areas, frequency severe pain experienced are all predictors to development of depression in chronic pain sufferers.

Anger
- Increases sympathetic nervous system and deficient parasympathetic (calming) nervous system
- Anger increases muscle tension increasing pain
- Increased sensitivity to acute pain amongst subjects who claim to become easily angered, stuff anger, explode
- Activates stress response
  - inc. Cortisol
  - Increased cortisol disturbs REM sleep
Fear...Anxiety
- Anxiety levels have been shown to predict pain severity and pain behavior in acute and chronic pain patients.
- The anxious body is in a constant state of over arousal and preparedness for a fight or flight response and never relaxes.
- Many fears...finances, future, progressive nature, unknown, rejection, misunderstood.

Anticipatory Pain/Fear
- Nerves/muscles have memory
- Poor pacing
- Lack of utilization of support system
- Anxiety

JAMA’s Newborn Study
- 21 full term newborns born to diabetic mothers
- 21 full term newborns born to nondiabetic mothers
- Repeated heel lances in first 24-36 hrs
- 21 newborns in control group received IM Vit K injection
- Newborns exposed to repeated heel lances learned to anticipate pain evidenced by intense pain responses during venipuncture compared to normal infants
- Observed grimacing, crying

Guilt
- Role Changes
- Expectations (self, others, others of self)
- Often ties heavily to belief systems that may be harmful “A strong person never asks for help” “A man should never be in need or show weakness”

Pain and Loss
- Many Losses
  - Function
  - Dreams/Goals
  - Changing family roles
  - Employment changes
  - Financial changes
  - Pride
- Recreation
- Social activities
- Sexual behavior
- Self-care
- Sleep disturbance
- Low self-esteem

Unique Sources of Stress for Chronic Pain
- Pain experience itself
  - Pain creates tension-physical and emotional
  - Tension manifests in muscle tension
- Targets areas where pain seems to originate
- Intensifies pain
- Decreases pain tolerance
Unique Stressors for Chronic Pain

- Negative Consequences from Chronic Pain
  - Employment
  - Financial Security
  - Family Activities
  - Social Life
  - Hobbies
  - Recreational Activities
  - Quality Life
  - Dealing w/ Medical Community
  - Work
  - Comp/Ins./Disability
  - Emotional consequences
    - Fear
    - Depression
    - Hopelessness
    - Anxiety

Unique to Pain

- New Issues
  - Independence
  - Dependence
  - Acceptance
  - Medical Community
  - Maintaining Hope
  - work issues
  - Legal issues
  - fear of progression

Unique Stressors for Chronic Pain

- Every Day Stress
  - Life is Chronic
  - Daily stresses more related to illness than major life events
  - Added on pain related stressors just too much for many
  - Stress will intensify pain

What is Stress

- **Perceived** inability to cope with an unpleasant or painful life situation
- Non specific response to demands placed on the body
- Produces physical, emotional, and behavioral responses
- Internal/external force causing a person to be tense, upset, or anxious

Physiologic Response

Fight-Flight

- Fight-Flight activated
  - whether stress is physical or emotional
  - Whether stressor is perceived or actual

Fight-Flight Process

- Realized stressor activates the hypothalamus
- Hypothalamus stimulates corticotrophin releasing factor, pituitary gland which release ACTH. Adrenal cortex releases corticoid
- Hypothalamus stimulates nervous system and release epinephrine
Physical Effects of Stress

<table>
<thead>
<tr>
<th>Anatomy</th>
<th>Effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ears</td>
<td>Hyperactivity, increased oxygen in blood</td>
<td>Increased heart rate, impaired ability to</td>
</tr>
<tr>
<td></td>
<td>stream to flee</td>
<td>sleep, hyperventilation, subnormal asthma</td>
</tr>
<tr>
<td>Lungs</td>
<td>Hyperactive, increased oxygen in blood</td>
<td>Impaired vision as</td>
</tr>
<tr>
<td></td>
<td></td>
<td>respiratory conditions</td>
</tr>
<tr>
<td>Skin</td>
<td>Burns</td>
<td>Oily, dry skin</td>
</tr>
<tr>
<td>Heart</td>
<td>Increased production of cortisol and</td>
<td>Increased blood pressure,</td>
</tr>
<tr>
<td></td>
<td>adrenaline, hyperventilation</td>
<td>heart palpitations, problems with</td>
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<tr>
<td></td>
<td></td>
<td>blood clots</td>
</tr>
<tr>
<td>Immune</td>
<td>System</td>
<td>Decreased white blood count</td>
</tr>
<tr>
<td>Muscular</td>
<td>Skeletal system</td>
<td>Stiff, lower bone density</td>
</tr>
<tr>
<td>Digestive</td>
<td>System</td>
<td>Headaches, weight gain, decreased mobility,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hives, constipation, diarrhea, nausea,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ulcers, decreased absorption of nutrients,</td>
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<tr>
<td></td>
<td></td>
<td>increased excretion of bile acids,</td>
</tr>
</tbody>
</table>

Physical Stress Response

1. Elevated HR
2. Elevated BP
3. Elevated RR
4. Elevated Adrenalin
5. Elevated Blood Sugar
6. Elevated Cholesterol—increased fatty acids and glucose—liver produces more
7. Change in Blood Flow

Impact of Stress on Pain

- Affects pain: Does NOT CAUSE
- Increases intensity of Pain
- Contributes to depression and anxiety which decreases ability to tolerate pain
- Less likely to mobilize effective coping strategies

Psychosocial Signs of Stress

- resentment
- anger, loss of temper
- feeling of helplessness
- out of control
- resistance to treatments or tests
- Overuse/misuse of drugs (Rx and OTC)
- withdrawal
- overuse of alcohol
- excessive excitement
- confusion and forgetfulness
- nervousness
- irritability
- complaints of anxiety
- Depression
- Failure to advance in medical treatments

Maladaptive Coping

- Denial
- Imploding/Exploding
- Filling time with business to avoid dealing with source of stress
- Avoidance: withdrawal, isolation, procrastination
- Poor nutrition
- Inactivity
- Abuse, Misuse, Drugs (street, Rx, OTC)—Use Data Model
- Withdrawal from spiritual and social support
- Stinkin thinking: .... Victim Mentality
- Emotionally stuck
Stress Management

Tools
1. Awareness
2. Relaxation
3. Skills
4. Pacing
5. Humor
6. Diet
7. Pleasure
8. Love

Relaxation
- Purposeful time away to physiologically and emotionally slow self down
- Visual Imagery
- Progressive Muscle
- CD
- 2 Deep Breath
- Lowers anxiety and inc. ability to tolerate pain.
- “My pain hasn’t changed but I don’t panic anymore so it is a lot better. I can handle it now”

Relaxing is a verb!

Communication
- Internal
  - Recognize false belief systems
  - Learn to TAP: Test/Apply/Practice
  - Every emotionally charged thought affects our biology
  - Expression begins with identification

- External Communication
  - Use Clean I Statements
  - Eliminate Questions
  - Eliminate You Statements
  - Learn to Fight Fair
  - Complain don’t criticize
  - Use active/passive/no listening appropriately

“The greatest discovery of my generation is that people can alter their lives by altering their attitudes of mind.” (William James-Psychologist/Philosopher)

“Thinking is easy, acting is difficult and to put one’s thoughts into action is the most difficult thing in the world.” (Johann Wolfgang von Goethe-German Poet)
“Still needs to improve on pacing”

- Balancing rest and activity according to body’s signals
- Poor Pacing: Inc Pain, Anticipatory Fear
- At risk for poor pacing when:
  - Tired/Fatigued
  - Insecure
  - Rushed
  - Can’t say “No”
  - Don’t recognize/challenge false beliefs

Laughter

- Lost Art:
- Multi-system benefits
  - GI
  - Immune
  - Respiratory
  - Muscular
  - Cardio
- Releases opioids and endorphins
- Laughter Bag

Diet/Nutrition

- Non “CRAP” diet
  - Caffeine
  - Refined Carbs
  - Alcohol
  - Processed Foods Anti-Inflammatory Diet
- Anti-inflammatory Diet
- Include Nutritional Assessment

Proper Exercise

Must Include Stretching

- Chronic Pain requires more of a passive PT approach
- Stretching, light strengthening, advancing to cardio as tolerated
- Needs to be part of lifestyle
- Value in Group Component
  - Adds support, companionship, accountability

Connecting with Others and Life

- Express yourself
- What brings you pleasure?
- What brings meaning to your life?
- What makes you smile from your toes?
- Develop an emotional language
- Broaden emotional field

Nurses Role-Sharing the Tools

- Knowledge/Awareness:
  - Increase professional knowledge
  - Eliminate Judgments
  - Counter misconceptions
Nurses Role: Awareness

- Proper assessment (comprehensive)
  - Coping - observe and inquire
  - Desire to change/improve
  - Belief systems
    - Engage person in articulating stressors
    - For physical and psychosocial signs of anger/depression/anxiety, fear, guilt

- Aim to empower
- Develop plan together
- Aware of behavioral Health professionals in your community

Nurses Role: Communication

- Listening
  - Active vs passive
  - Solution vs resolution
  - Cautiously use questions (puts one on the defense)
  - Listen with a view to understand
  - Listen with empathy
  - Listen to hear their need

Data Model
Increasing Awareness of Pain/Stress/Fatigue/Emotions

Green Zone (0-5)
- Go Ahead/CHECK LATER/Use tools

Yellow Zone (6-8)
- SLOW DOWN/Proceed with Caution/Use Tools

Red Zone (9-10)
- STOP! Take care of it NOW/Use your tools

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