Clinical decision making related to stage of healing by Orthopedic Certified Specialist

Jared Franciosa SPT, Jenifer Igoe SPT, Ian Tomczak SPT, Jessica Vongxay SPT

Advisors: John J. Stachura PT DPT MBA Cert. MDT FAAOMP, Jennifer Bogulski PT DPT OCS

Physical Therapy Department, Daemen College

Purpose:

In physical therapy (PT) practice, many diagnostic classifications exist in assisting the clinical decision making process regarding treatment. One universal classification system is stage of healing identification. This system is categorized into 3 sequential phases: inflammatory, proliferative, and remodeling stages of healing.4 The human body undergoes a natural healing process inclusive of all 3 phases, and PTs rely on the characteristics of each phase to structure treatment plans and progressions.3 However, PT clinical decision making abilities differ based on individual characteristics such as years of experience6 and therapist’s credentials.6 This paper reviews the literature relative to the differences amongst PT’s clinical decision making abilities.

Materials and Methods:

Jette et al1
- 13 case scenarios
- Cases included a mixture of musculoskeletal (MS), non-acute (NC), and medical conditions (CC).

Server et al2
- A case study of a patient with chronic lateral epicondylitis
- The use of augmented soft tissue mobilization (ASTM) as a treatment method
- Collection of biophysical and psychological data and case studies relating to lateral epicondylitis.

Mills-Spoto and Gombatto3
- 2 cases inclusive of low back pain (LBP) and shoulder examination data
- 2 surveys examining diagnostic decision making of clinicians based on the cases
- Decision of most pertinent interventions

Wainswright et al4
- Qualitative research methods and grounded theory to determine the components which contribute to clinical decision making (CDM)
- Video and audio recordings of PT to patient interactions, treatment processes, and interviews

Results
- 364 out of 1000 usable questionnaires returned
- Correct management decision based on clinical reasoning
- Performance of the PTs was within the range of 87-93% for MS, 87-94% for NC, 79% for CC
- 3%, 7%, and 11% of responses would not make a medical referral at all for the 3 cases

Patient was in the chronic phase of lateral epicondylitis
- The ASTM exaggerated the inflammatory process

This initiated a healing cascade that allowed the reactive chronic degenerative tissue to move into an active inflammatory phase later progressing to a proliferation status.

- 135 responses received
- 46.7% of clinicians would treat LBP using McKenzie Method
- 57.9% of clinicians would treat shoulder pathology with the physioterapist system
- No relationship between the diagnostic label and the importance of intervention strategies for either survey

- Factors influencing CDM were categorized into tissue healing informative and directive
- Novice PTs relating to informative factors: academic content and faculty membership, anticipated patient performance and personal experiences
- Experienced PTs relating to directive factors: patient’s movement behavior and reflection in action.

Analysis:

1. Jette et al5 concluded physical therapists may lack appropriate knowledge or training for medical conditions and differential diagnoses; however, it was noted that orthopedic specialists more accurately identified musculoskeletal and critical medical conditions.
2. Sever et al6 found that the application of ASTM helped the patient transition from a degenerative chronic stage of healing to an active inflammatory stage of healing. They identified this transition based on physical signs before and after the treatment session. Thus, the healing process was initiated by the beginning of an inflammatory response.
3. Miller-Spoto and Gombatto7 found that OCS were using different diagnostic labels based on their LBP and shoulder pathology; however, the diagnostic label and the importance of intervention strategy had no correlation. Regardless of the label the OCS used for the patient’s presentation, the importance of intervention strategy did not change.
4. Wainswright et al8 identified differences in CDM factors between novice and experienced therapists. The results of this study may be used to facilitate learning experiences of novice therapists in order to develop skills on the level of expert CDM.

Conclusions:

Physical therapists have an important role in determining medical conditions, stage of healing, and the importance of intervention strategy based on both the medical condition and stage of healing.1,2,3 Determining what stage of healing a patient is currently in drives the intervention strategy in order for the patient’s condition to heal properly. The studies examined found that therapists with more experience and training were more accurate in determining critical and non-critical medical conditions as well as CDM in therapy.4,5 Even when different diagnostic labels for medical conditions are chosen, the importance of intervention strategy remained similar amongst physical therapists.

Future Research:

Further research should examine the accuracy of physical therapists in properly identifying stages of healing based on patient presentation for different musculoskeletal conditions in addition to properly identifying serious medical conditions that are outside of the scope of physical therapy practice. Additionally, future research should examine if there are differences between physical therapists’ ability to identify patient stage of healing based on certain characteristics such as years since graduation, therapist’s education, or therapist age as well as identifying therapists’ criteria for identifying a patient’s stage of healing.

References:


Image 1: Time frame of stages of healing

Image 2: Time frame of stages of healing

Image 3: Time frame of stages of healing

Image 4: Time frame of stages of healing

Table 1: Stages of Tissue Healing: Clinical Signs and Characteristics

<table>
<thead>
<tr>
<th>Stage</th>
<th>Acute Stage: Inflammatory Region</th>
<th>Subacute Stage: Proliferation, Repair and Healing</th>
<th>Chronic Stage: Maturation and Remodeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular changes and early hemorrhagic activity</td>
<td>Growth of capillary bed in area of collagen and granulation formation</td>
<td>Maturation of connective tissue and remodeling of scars via collagen fiber alignment and direct</td>
<td></td>
</tr>
<tr>
<td>Inflammation: redness, swelling, heat, pain at rest, loss of function</td>
<td>Decreasing inflammatory signs</td>
<td>Absence of inflammation</td>
<td></td>
</tr>
<tr>
<td>Guarding due to painful movement</td>
<td>Muscle test may be weak</td>
<td>Contraindications or alleviations may limit tissue range of motion</td>
<td></td>
</tr>
<tr>
<td>Pain before tissue resistance</td>
<td>Function limited by weakened tissue</td>
<td>Function may be limited by muscle weakness, poor endurance or poor neuromuscular control</td>
<td></td>
</tr>
</tbody>
</table>