Beyond Weakness & Beyond Function
Integrating the Bio-Psycho-Social Model to Physical Therapy in Critical Illness

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People do not ‘have’ diseases, which are really descriptive mechanisms created by contemporary medicine. People have stories, and the stories are narratives of their lives, their relationships, and the way they experience an illness.

-Arthur Kleinman, The Illness Narratives
Objectives

1. Describe the psychosocial-environmental impact of a critical illness course both acutely and chronically

2. Explain the bio-psycho-social model of care and its implications in the ICU

3. Conceptualize physical therapy treatment and potential effects to multiple body systems and patient domains

4. Explain scientific rationale and plausibility for early physical therapy involvement, mobility, and rehab for patients with critical illness
Background Information

1. Physical Therapists in the ICU: Rationale
2. Physical Therapists in the ICU: Action

Resources
- Outcomes After Critical Illness & Surgery
- ICU Liberation
- ICU Delirium and Cognitive Impairment Study Group
- Mobilization Network
- Art and Science of Delirium
- Nancy Andrews: Delirious

Introduction

Critical illness can now be viewed as physical, neurocognitive, and psychological insult...

“For 3 weeks I was held in a room, I was tied to the bed if I tried to get away. I couldn’t talk; I couldn’t eat; I was not allowed to sleep; Groups of people would enter the room and look at me and talk about me and I was sometimes undressed in front a small audience. I was shot full of drugs. I was too weak to move. I could not see my body, but it had been cut nearly in half. Insects crawled on the walls and ceilings.” -Nancy Andrews

Critical illness is a heterogenous label that contains a myriad of conditions and diagnoses. They include sepsis, shock, acute lung injury, acute respiratory distress syndrome, various types of respiratory failure, metabolic abnormalities, cardiac diagnoses, and depending on the ICU various surgical procedures or advanced life support. Further, the pre-morbid diagnoses as well as the physical, psychological, and functional state of each individual is varied, can be quite complex. NOT homogenous.

Yet, Post Intensive Care Unit Syndrome (PICS) has been labeled as a cluster of symptoms and impairments present post an ICU course. It is well established that patients may have acute, and long term, impairments in body structures/functions, activities, and participation.

But, where do we concretely fit the necessary psychological constructs into the international classification of functioning and disability model?
Improving long-term outcomes after discharge from intensive care unit: Report from a stakeholders’ conference


Dale M. Needham, MD, PhD; Judy Davidson, DNP, RN; Henry Cohen, PharmD; Ramona O. Hopkins, PhD;

Family (PICS-F)

Mental Health
Anxiety/ASD
PTSD
Complicated Grief

Survivor (PICS)

Mental Health
Anxiety/ASD
PTSD
Depression

Cognitive Impairments
Executive Function
Memory
Attention
Visuo-spatial
Mental Processing Speed

Physical Impairments
Pulmonary
Neuromuscular
Physical Function
Psycho-Social-Environmental Impact

The short and long term sequelae, complications of critical care span body systems and ICF domains. Whether assessed physiologically and physically from a body systems standpoint or globally from an enablement or disablement framework, the impact of critical illness, the legacy, even the story is quite profound. Measurable physiologic impairments of nerves and muscles. Physical limitations including weakness, walking ability, and physical performance. Neurocognitive and psychological difficulties including memory, attention, post traumatic stress, depression, and anxiety. Limitations in body structure and function. Difficulty with activities. …

But, these person level measures do not capture the whole picture. Survivors struggle with participation and return to work. Family and caregivers exhibit post traumatic stress and emotional difficulties. Patient’s report decreased quality of life. Patients subjectively endorse weakness, prolonged recovery periods, and inability to return to work. So, patients and their family enter the ICU with a severe medical problem and essentially leave disabled with a rehabilitation problem. In order to fully address this we must fundamentally change how we look at physical therapy, rehabilitation, and critical care as well as their interrelationship.

The impact of critical illness, even acutely, extends beyond the physiologically and the physical. Think with me. Imagine the the environment of the ICU from the patients perspective. Supine looking toward the ceiling. Disorderly day and night cycles. The sensation of lines, tubes, wires, and invasive devices all over the body. The sounds of alarms, people in and outside the room. The effects of medication, disorientation, and lack of sleep. Imagine the stress. Now, picture the family. The unknown, the stress, the jargon. The interaction of the environment, psychologic, and social constructs are separate, but also simultaneously a result of and contribution to the physiologic and physical legacy of critical illness.

Bio-Psycho-Social Model of Care

The Bio-psycho-social model is an evolution of the standard bio-medical model of care. The “bio” encompasses all of traditional biomedicine including pathology, physiology, anatomy, etc. But, given recent understandings of symptoms, function, and the impact of medical diagnoses and medical treatment on the entirety of a person (including social connections) the need for an expanded view of disease and health was needed. The BPS model recognizes that a patient within the medical system experiences and exhibits more than impairments in physiology and function, and that psycho-social constructs are vitally important to all aspects of care.
The biopsychosocial model of disease

My long-term health conditions are biological in origin, but the impact has been felt physically, psychologically and socially. My long-term health condition can’t be treated just through the biological medical model alone.

“The medical support keeps me *alive*, but it is the psychological and social support that enables me to *live*.”


1. Psychosocial Issues: Why should you care?
2. A Convincing Case—For the Psychologically Informed Physical Therapist
3. PTJ Special Issue on Psychologically Informed Practice
4. Biopsychosocial for Physical Therapists
5. Implement psychosocial factors in physical therapy treatment
6. Social in Bio-Psycho-Social
7. How much attention to Bio-Psycho-Social?
8. Establishing the Scientific Validation of Bio-Psycho-Social

Scientific Rationale and Plausibility for Early Physical Therapy


1. Critical Illness as an INSULT: Muscle, Nerve, Brain Injury
2. Bed Rest Effects
3. Bed Rest Effects in Critical Illness
4. Long Term Outcomes In Critical Illness
5. Safety and Feasibility of Early Physical Therapy
6. Preliminary Results from Clinical Research and Quality Improvement Projects
7. The next step…. beyond weakness and function….
What to Do?

“What happened to me in the hospital? Yes, my life was saved, and I am grateful for that, but life AFTER the ICU was extraordinarily difficult, not only physically but also mentally.”

-Nancy Andrews, ICU Survivor

As much as we can, as soon as we can, as safe as we can:
Mobility, activity, exercise, interaction, wakefulness, education...

1. Understand the sequelae and impact of critical illness from ICF, body systems, and bio-psycho-social view points
2. Recognize the environment of critical care and medical treatment
3. Screen for delirium, confusion, pain, and agitation
4. Minimize Sedation ([No Sedation?](#))
5. Early Detection of Psychological and Cognitive Issues
6. Change Environment
7. Understand how mobility, therapy, and interaction can affect cognition and psychology
8. Interventions beyond physical and functional: Environment, cognitive, social, family
9. Identify and address environment, psychological, and social issues to improve physical function and vice versa
Improving patient care through the prism of psychology: application of Maslow's hierarchy to sedation, delirium, and early mobility in the intensive care unit
References

Treatment
1. The Influence of the Therapist-Patient Relationship on Treatment Outcome in Physical Rehabilitation: A Systematic Review
2. A review of the psychotherapeutic ‘common factors’ model and its application in physical therapy: the need to consider general effects in physical therapy practice
3. Improving patient care through the prism of psychology: application of Maslow’s hierarchy to sedation, delirium, and early mobility in the intensive care unit
5. Improving post-intensive care unit neuropsychiatric outcomes: understanding cognitive effects of physical activity
6. Cognitive and physical rehabilitation of intensive care unit survivors: results of the RETURN randomized controlled pilot investigation
7. A combined early cognitive and physical rehabilitation program for people who are critically ill: the activity and cognitive therapy in the intensive care unit (ACT-ICU) trial
8. Rehabilitation for people with critical illness: taking the next steps
9. Rehabilitation of mind and body after intensive care unit discharge: a step closer to recovery
10. Development of the 3-SET 4P questionnaire for evaluating former ICU patients’ physical and psychosocial problems over time: a pilot study

Outcomes
1. One-year outcomes in survivors of the acute respiratory distress syndrome
2. Functional Disability 5 years after acute respiratory distress syndrome
3. Long term outcome after acute lung injury
4. Cognitive impairment after intensive care unit admission: a systematic review
5. Post-traumatic stress disorder symptoms after acute lung injury: a 2-year prospective longitudinal study
6. Physical and mental health in patients and spouses after intensive care of severe sepsis
7. Long-term neurocognitive function after critical illness
8. Depressive symptoms and impaired physical function after acute lung injury: a 2-year longitudinal study
9. Self-reported depressive symptoms and memory complaints in survivors five years after ARDS
10. The brain after critical illness: effect of illness and aging on cognitive function
11. Medical and economic implications of physical disability of survivorship
12. Long-term cognitive, emotional, and functional outcomes in trauma intensive care unit survivors without intracranial hemorrhage

Other Practice Areas
1. The Therapeutic Alliance Between Clinicians and Patients Predicts Outcome in Chronic Low Back Pain
2. Efficacy of classification-based cognitive functional therapy in patients with non-specific chronic low back pain: A randomized controlled trial
3. Biopsychosocial care and the physiotherapy encounter: physiotherapists’ accounts of back pain consultations
4. Associations for change in physical and psychological factors and treatment response following exercise in knee osteoarthritis: An exploratory study