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Occupational Therapy in the Intensive Care Unit

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Hospitals in America are seeing a rise in the number of inpatient cardiac surgeries, increasing from 5,939,000 in 2000 to 7,588,000 in 2010 (Mozaffarian et al., 2015). As more patients require cardiac surgery, occupational therapy services are needed in the intensive care unit (ICU) to facilitate patients’ return to their daily lives. Due to the nature of cardiac surgery, patients’ physical, cognitive, and psychosocial well-being may be affected. Occupational therapists use a holistic approach to healthcare by addressing the entire person. This supports the inclusion of psychosocial interventions for physical, cognitive, and psychosocial factors in the ICU during recovery. Addressing these three factors may promote overall health and well-being, as well as increase participation in meaningful activities.

**Psychosocial Factors**

Patients that undergo cardiac surgery are at an increased risk for developing depression and anxiety which may have long lasting symptoms that may negatively impact their quality of life (Paparrigopoulou et al., 2013). Literature has shown the prevalence of depression to be 23% and anxiety to be 45.5% post cardiac surgery (Pirraglia et al., 1999; Tully, Baker, Turnbull, & Winefield, 2006).

Evidence shows signs of patients undergoing cardiac surgery have 25% more symptoms of depression and anxiety than the patients themself (Bunzel et al. 2007).

- To identify impairments in psychosocial functioning, the Hospital Anxiety and Depression Scale (HADS) may be administered to patients. The HADS demonstrates high validity, specificity, and sensitivity to both anxiety and depression. (Bjelland, Dahl, Haug, & Neckelmann, 2001).
- To address anxiety and depression in patients that undergo cardiac surgery, psychosocial education and music therapy are both supported by evidence. Patients and partners who received psychosocial education had decreased anxiety and depression, as well as a significant improvement well-being (Årøen, Berg, Svedjholm, & Storbom, 2015). Implementing music therapy post cardiac surgery significantly reduced pain and anxiety in patients undergoing cardiac surgery (Sendelbach, Halm, Doran, Miller, & Gaillard, 2006).

**Clinical Pathway for Intensive Care Unit**

The purpose of the proposed occupational therapy evidence-based clinical pathway at Milford-Penninsula Medical Center is to provide a clinical guide for occupational therapy intervention for patients post cardiac surgery on the intensive care and step-down units. The clinical pathway addresses common factors that complicate recovery in patients post cardiac surgery and creates a standard for consistent and effective treatment.

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**OCCUPATIONAL THERAPY**

**Evidence-Based Clinical Pathway**

**Day 1**

- **Education**
  - Physical presence – Physical presence – promote adherence to procedures.
  - Gait and balance exercises at bedside.
  - Hymns and prayer.
  - Cardiovascular exercises.
  - Caring education: *Caring education: Patients need to know that everything that occurs is for their benefit.*
- **Early Mobilization**
  - Early mobilization: Patient walks with no assistance.
  - Patient participates in group physical therapy.
- **Cognitive Education**
  - Cognitive education: *Cognitive education: Patients should be empowered to make informed decisions about their health care.*
- **Progression of Rehabilitation**
  - Day 1: Early mobilization.
  - Day 2: Early mobilization.
  - Day 3: Early mobilization.
  - Day 4: Early mobilization.

**Day 2**

- **Education**
  - Physical presence – Physical presence – promote adherence to procedures.
  - Gait and balance exercises at bedside.
  - Hymns and prayer.
  - Cardiovascular exercises.
  - Caring education: *Caring education: Patients need to know that everything that occurs is for their benefit.*
- **Early Mobilization**
  - Early mobilization: Patient walks with no assistance.
  - Patient participates in group physical therapy.
- **Cognitive Education**
  - Cognitive education: *Cognitive education: Patients should be empowered to make informed decisions about their health care.*
- **Progression of Rehabilitation**
  - Day 1: Early mobilization.
  - Day 2: Early mobilization.
  - Day 3: Early mobilization.
  - Day 4: Early mobilization.

**Day 3: Transfer to Step-Down Unit**

- **Education**
  - Physical presence – Physical presence – promote adherence to procedures.
  - Gait and balance exercises at bedside.
  - Hymns and prayer.
  - Cardiovascular exercises.
  - Caring education: *Caring education: Patients need to know that everything that occurs is for their benefit.*
- **Early Mobilization**
  - Early mobilization: Patient walks with no assistance.
  - Patient participates in group physical therapy.
- **Cognitive Education**
  - Cognitive education: *Cognitive education: Patients should be empowered to make informed decisions about their health care.*
- **Progression of Rehabilitation**
  - Day 1: Early mobilization.
  - Day 2: Early mobilization.
  - Day 3: Early mobilization.
  - Day 4: Early mobilization.

**Day 4: Discharge**

- **Education**
  - Physical presence – Physical presence – promote adherence to procedures.
  - Gait and balance exercises at bedside.
  - Hymns and prayer.
  - Cardiovascular exercises.
  - Caring education: *Caring education: Patients need to know that everything that occurs is for their benefit.*
- **Early Mobilization**
  - Early mobilization: Patient walks with no assistance.
  - Patient participates in group physical therapy.
- **Cognitive Education**
  - Cognitive education: *Cognitive education: Patients should be empowered to make informed decisions about their health care.*
- **Progression of Rehabilitation**
  - Day 1: Early mobilization.
  - Day 2: Early mobilization.
  - Day 3: Early mobilization.
  - Day 4: Early mobilization.

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**Guidelines**

1. Follow established guidelines per patients’ state from Cardiac Surgery programs
2. Apply moisture sensitive and anti-infective therapy under these conditions.
3. Maintain temperature, blood pressure, ECG, and oxygen saturations.
4. The use of protective hand gloves when in contact with wounds.
5. The importance of proper patient hygiene, and general hygiene.
6. The use of protective eye wear.

**Cognitive Factors**

Early identification of mild cognitive impairment (MCI) in patients that undergo cardiac surgery should occur prior to discharge from acute care. In a longitudinal study that followed 261 patients post coronary artery bypass graft (CABG), the incidence of cognitive decline was 53% at discharge, 36% at six weeks after surgery, 24% at six months after surgery, and 42% at five years after surgery (Nesbitt et al., 2005). According to Atgren, Lundqvist, Nordlund, Aren, and Ruberg (2003) that found patients post CABG experienced impairments in attention and brain behavior during an on-the-road test, Ayat, Albayrak, Guzeloglu, Baysak, and Hazan (2013) found that patients post CABG experienced noncompliance with respiratory exercises. This increased difficulty learning management of inhalers as a result of MCI. Both studies demonstrate the significant impact MCI has on safety.

Cameron, Carter, Page, Stewart, and Ski (2013) compared the Mini Mental State Exam (MMSE) and the Montreal Cognitive Assessment (MoCA) and found that the MoCA classifies 41% of patients with heart failure as cognitively impaired that were not classified as having MCI by the MMSE.

**Physical Factors**

The inclusion of early mobilization in occupational therapy intervention for patients post cardiac surgery in the ICU is supported by current literature. Studies show early mobilization may reduce the effects of disuse muscle atrophy by maintaining or improving patients functional participation, endurance, and muscle strength (Citerio et al., 2015; Fan, 2012; Nordrant-Craft et al., 2012). The progression of early mobilization in the ICU may be guided by Metabolic Equivalent of Task, vital signs, and patient’s ability to mobilize. (Joo et al., 2004; Preston & Flynn, 2010; Savage, Toth, & Ades, 2007).

Sternal instability may result in pain that limits patients’ ability to perform daily tasks (El-Ansary, Waddington, & Adams, 2007; Kun & Jüblin, 2009; Obrecht et al., 2006; Tuyt, Mackney, & Johnstone, 2012). To address this concern, guided support the inclusion of thoracic exercises and precautionary sternal precautions to facilitate proper healing of the sternum and return 41% of patients with heart failure (Brocki, Thorup, & Andreasen, 2010; Cahalin et al., 2011; Sturgess, Denehy, Tully, & El-Ansary, 2014).