EFFECT OF EXERCISE ON CHEMOTHERAPY-INDUCED FATIGUE IN CHILDREN

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“Fatigue interferes with the developmental experiences of childhood” – Hooke

**BACKGROUND**

- Fatigue is the most common side effect of cancer treatment (NCTI).
  - “A subjective term, denotes a feeling of tiredness or exhaustion”
  - Proposed mechanism:
    - Reduced oxygen delivery
    - Pulmonary or cardiovascular damage
    - Increased inflammation
    - Loss of muscle mass and function, which can reduce physical performance
    - Decreased sleep quality
    - Weight loss, muscle wasting
  - Timeline of fatigue following chemotherapy: Most fatigue occurs in the days after each cycle.
  - For some, fatigue is most severe mid-way through all treatment.
  - Effects can last for months or years following cessation of treatment.
- Moderate intensity exercise reduces fatigue in adults cancer survivors, regardless of treatment

**Fatigue and Physical Performance in Children and Adolescents Receiving Chemotherapy**

**Purpose:** to examine the relationship between physical performance and fatigue in child and adolescent cohorts during the first three cycles of chemotherapy

**Design:** prospective, observational

**Methods:**
- Physical performance tests (TUDS, 6MWT) and a self-reported fatigue scale were administered during the first and third cycles of chemotherapy to children and adolescents newly diagnosed with cancer

**Results and Conclusions:**
- Fatigue appears to be a multidimensional experience with both psychological distress of fatigue merging with the physical sensation.
- Fatigue in children is related to physical performance (physical sensation).
- Fatigue in adolescents is more complex with mental, emotional, and physical aspects.

**Impact of Effective Nursing Interventions to the Fatigue Syndrome in Children Who Receive Chemotherapy**

**Purpose:** to detect the impact of appropriate nursing interventions on decreasing fatigue syndrome

**Design:** experimental, randomized control study

**Methods:**
- Control group (routine nursing intervention) and an experimental group (effective nursing intervention)
- Both groups were given the Fatigue Scale- Child and the Fatigue Scale-Parent

**Results and Conclusions:** Fatigue in children with cancer can be reduced by implementing appropriate nursing interventions including:
- Exercise interventions- walking the hallway 10-15 min at a time
- Limiting sleep interruption
- Nutrition education
- Physical activity education
- Energy preservation education
- Leisure Activities based on child preference (drawing, reading, etc.)

**Non-Pharmacological Interventions to Manage Fatigue and Psychological Stress in Children and Adolescents with Cancer: An Integrative Review**

**Purpose:** to synthesize the evidence of non-pharmacological intervention studies to manage fatigue and psychological stress in children with cancer

**Sample:** 9 articles related to CRF, psychological stress, and non-pharmacological interventions

- Types of non-pharmacological interventions: physical exercise, healing touch, music therapy, therapeutic massage, nursing interventions, and health education
- Types of outcome measures: fatigue/stress scores assessment

**Results and Conclusions:** Physical exercise is the most frequently tested intervention and it is suggested that this intervention can improve CRF and psychological stress in children and adolescents with cancer.

**CONCLUSIONS & CLINICAL RECOMMENDATIONS**

- Physical exercise can decrease cancer related fatigue and psychological stress in children and adolescents with cancer
- Provide mild-moderate intensity exercise interventions and education on nutrition
- Encourage physical activity
- Educate other healthcare providers to limit sleep interruption
- Take into consideration the mental and emotional aspects of fatigue, especially in adolescent patients

**REFERENCES**