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Evidence-Based OT Practice for Patients with Cancer Related Fatigue

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Clinical Scenario: 38-year-old male diagnosed with Non-Hodgkins Lymphoma seeking outpatient occupational therapy services to address sleeplessness, pain, fatigue and return to work opportunities.

1 Ask: Research Question

What are the best interventions for cancer related fatigue for our patients?

2a Acquire: Search Terms

Databases: ProQuest, PubMed, ClinicalKey
Search Terms: cancer, Non-Hodgkins Lymphoma, fatigue, occupational therapy, exercise, evidence based practice

2b Acquire: Selected Articles

Hunter et al. (2017): Systematic review that focuses on the importance of physical activity and symptom management. n=86 (25: physical activity intervention, 19: symptom management interventions, 26: complementary and alternative medicine, 12: lymphedema, 4: PAM's). Dates ranged from 1995-2014.

Mitchel et al. (2014): Systematic review that focuses on the evidence for effectiveness for CRF with the use of pharmacologic and nonpharmacologic interventions. n=85 (40: exercise/physical activity, 12: psychoeducational interventions, 6: progressive muscle relaxation, 10: cognitive-behavioral interventions, 2: yoga, 5: meditation/mindfulness-based stress reduction, 1: management of concurrent symptoms, 6: acupuncture, 3: Qigong). Dates ranging from 1990-2014.

Segal et al. (2009): Randomized controlled trial that looks at the difference between resistance training and aerobic exercise in relation to CRF amongst men with prostate cancer. There were three independent variable groups: resistance exercise training (n=40), aerobic exercise (n=40), usual care (n=41). The dependent variable is the FACT-Fatigue scale and was measured at pre, mid, and post treatment. Men were excluded if they had severe cardiac disease, uncontrolled hypertension, pain, psychiatric illness, or lived more than 1 hour away. This study took place over a 24-week span with clearly defined treatment parameters.

3a Appraise: Study Quality

Hunter et al. (2017): Level I. Eighty-five articles that provided level I evidence and 1 that provided level III evidence. No statistical analysis provided. The results are hard to generalize as the types of physical activity varied in each articles and it did not provide enough information for the interventions to be reproduced for future research. Does not generalize to all types and stages of survivorship.

Mitchel et al. (2014): Level I. Eighty-five articles that provided level I evidence. Small sample sizes and effect sizes of studies analyzed. Did not provide statistical analysis of study. Type of exercise, frequency, and duration observed is not consistent.

Segal et al. (2009): Level I. Large sample size, n=121. FACT-Fatigue scale is valid and reliable, self-reported measure. The study was blinded, two-tailed level of significance of .05, participants completed 88% of sessions, patients reported participating in exercise in addition to intervention sessions, interventions were supervised, no effect size. Poor generalizability to other populations, women, and cultures.

(Petrov, 2016)

3b Appraise: Study Results

Hunter et al. (2017): Twenty-nine percent of articles were based on exercise. More rigorous research is needed to provide a greater understanding of what population and what type of intervention is best. The interventions presented in this review are part of an emerging body of research; more research is needed to support occupation based interventions for this population.

Mitchel et al. (2014): Forty-seven percent of articles were based on exercise. Exercise and physical activity has been confirmed as effective in the management of CRF in 40 level I evidence articles. There is a gap in research as to what type, duration, and frequency of exercise is most effective.

Segal et al. (2009): Mixed-model repeated measures analyses indicated both resistance (p=.010) and aerobic exercise (p=.004) mitigated fatigue over the short term. Resistance exercise produced longer-term improvements (p=.002) and had additional benefits for QOL, strength, triglycerides, and body fat. The observed change in the fatigue scale of 4.1-4.8 with exercise intervention is clinically significant.

4 Apply: Conclusions for Practice

Exercise is shown to be the best evidence based practice based on the systematic reviews found. Both aerobic activity and resistance training showed improvements in CRF, with resistance training having longer lasting effects over the 24-week span.

References:

Braveman, B., Hunter, E., Nicholson, J., Arbesman, M., & Lieberman, D. (2017). Occupational Therapy Interventions for Adults With Cancer. *The American Journal of Occupational Therapy : Official Publication of the American Occupational Therapy Association, 71*(5), 7105395010p1-7105395010p5.

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Mitchell, S., Hoffman, A., Clark, J., DeGennaro, R., Poirier, P., Robinson, C., & Weisbrod, B. (2014). Putting Evidence Into Practice: An Update of Evidence-Based Interventions for Cancer-Related Fatigue During and Following Treatment. *Clinical Journal of Oncology Nursing, 18*(6), 38-58.

Segal, R., Reid, R., Courneya, K., Sigal, R., Kenny, G., Prud'Homme, D., . . . Slovinec D'Angelo, M. (2009). Randomized controlled trial of resistance or aerobic exercise in men receiving radiation therapy for prostate cancer. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology, 27*(3), 344-51.

Resistance training shown to be more effective than aerobic exercise in the long run for CRF patients, but both reduced fatigue in clients.

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