Nutritional Intervention Effectiveness in Oncology Patients Receiving Active Anti-Cancer Treatment: A Systematic Review

Amanda Adams, RN, BSN, DNP-s
FNP Track
University at Buffalo
School of Nursing
Learner Objectives:

- Inform on the current state of science regarding nutritional interventions in oncology patients.
- Provide platform for future research on topic.

Additionally:
- No conflicts of interest exist for this review or the information presented herein.
- No sponsorship or commercial support was provided for this review or presentation.
- Employer: Erie County Medical Center, Center for Cancer Care, Buffalo, NY, USA.
Acknowledgements

- Jessica Castner, RN, PhD (University at Buffalo)
  - Mentor and lead faculty support.

- Jennifer Frustino, DDS, PhD, and Carly Gerretson, FNP-C, RNFA of Erie County Medical Center
  - Second and third reviewers for inclusion/exclusion process.
“Cancer has the most devastating economic impact of any cause of death in the world” (The American Cancer Society, 2010, p. 2).

**Introduction**

- Cancer is leading cause of death worldwide (National Cancer Institute, 2016).
- Cancer treatments (e.g. chemotherapy, radiation, chemoradiation) come with related co-morbidities and side effects.
  - Malnutrition and progressive weight loss.

**Why is malnutrition a big deal?**
Purpose of Systematic Review

- Look at present state of science on nutritional interventions and effects on weight maintenance to inform practice potential.
- Identify if any gaps in literature exist.

Where/how can we be more impactful in our practice? What intervention(s) work(s) best?
Methods

- Medline & CINAHL Plus databases searched.
- McMaster University Quality Appraisal Tool for Quantitative Studies used for quality analysis.

### Inclusion Criteria

<table>
<thead>
<tr>
<th>P</th>
<th>Adults (18+), any cancer diagnosis at any stage, on active anticancer treatment (chemo, radiation, chemorads), monitor weight loss/malnutrition.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Nutrition education, supplementation, or combination.</td>
</tr>
<tr>
<td>C</td>
<td>No intervention; intervention not nutrition related.</td>
</tr>
<tr>
<td>O</td>
<td>Observation, randomized/controlled, intervention, or case studies. Outcome measured weight, performance status, and/or hospital admissions.</td>
</tr>
<tr>
<td>T</td>
<td>From 1980 to 2015 included in review.</td>
</tr>
</tbody>
</table>
# Key Phrase Search

- Table summarizing search terms and corresponding number of hits by term progression.

<table>
<thead>
<tr>
<th>Key Phrase Searched</th>
<th>Medline</th>
<th>CINAHL Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>“cancer OR oncology”</td>
<td>1,627,905</td>
<td>22,036</td>
</tr>
<tr>
<td>“nutrition intervention OR nutritional program”</td>
<td>1,933</td>
<td>843</td>
</tr>
<tr>
<td>“weight maintenance OR weight loss OR weight gain”</td>
<td>123,187</td>
<td>30,659</td>
</tr>
<tr>
<td>(cancer OR oncology) AND (nutritional intervention OR nutritional program) AND (weight maintenance OR weight loss OR weight gain)</td>
<td>67</td>
<td>27</td>
</tr>
</tbody>
</table>

Table summarizing search terms and corresponding number of hits by term progression.
Key Phrase Search

- (cancer OR oncology) AND (nutritional intervention OR nutritional program) AND (weight maintenance OR weight loss OR weight gain)
- Total Medline hits: 67; CINAHL Plus hits: 27
Results

- Integrated Theory of Health Behavior Change guided synthesis of results: proximal (short-term) and distal (long-term) goals (Ryan, 2009).

**Proximal Goals:** Six out of seven studies found that nutritional intervention (education and/or supplementation) significantly improved weight (gains, no losses).

**Distal Goals:** Two out of seven studies found hospital admissions were reduced in nutritional intervention groups.

- One study found improved performance status (ECOG scores) with early nutritional education intervention.

**What does this mean for practice?**
Practice Implications

- Intensive/focused early education, supplementation, or combination significantly benefits:
  - Weight maintenance
  - Improved performance status
  - Decrease in hospital stays
- Opportunity for further research
  - Expansion or improvements to current literature
Questions

Photo credit: http://www.humanosphere.org/tag/fred-hutchinson-cancer-research-center/
References


