



Occupational Therapy's Role in Pediatric Cancer Treatment



Christina Silver, BS, OTS

Faculty Advisor: Allison Naber, OTD, OTR/L, CLT-LANA

BACKGROUND & PURPOSE

- Cancer is the second-leading cause of death among children (Siegel, Miller, & Jemal, 2017).
- Advancements in pediatric cancer treatment have made it so more children are surviving cancer; however, many are left with numerous short- and long-term side effects (DeLuca et al., 2013).
- During and following treatment, children may experience decreased strength, balance, coordination, and fine motor abilities, as well as weakness and fatigue, pain, drug-induced peripheral neuropathy, and memory difficulties (Buckland & Mackenzie, 2017; DeLuca et al., 2013; Silver, Baima, & Mayer, 2013).
- Children hospitalized during treatment experience decreased opportunities for play and leisure compared to their healthy peers (Mohammadi, Mehraban, Davandi, Zarei, & Amini, 2017).
- Occupational therapy (OT) students typically receive minimal, if any, education regarding OT's role in pediatric oncology care (Sleight & Stein Duker, 2016).
- While OT practitioners feel that advanced education regarding pediatric oncology care is necessary to provide best care, only 14% of practitioners have received any post-degree education in the area (Buckland & Mackenzie, 2017).
- **Purpose:** The purpose of the Capstone Experience was to develop advanced knowledge and experience regarding OT's role in the treatment of children with cancer.

THEORETICAL FOUNDATION

Biomechanical Frame of Reference (Cole & Tufano, 2008)

- The focus is put on the physical impairments limiting function, and in turn limiting occupational performance. Practitioners should have the goal of restoring body function when using this frame of reference to guide practice.
- Evaluations administered during the experience assessed range of motion and strength, while many treatment sessions included gross/fine motor strengthening, range of motion exercises, and endurance/activity tolerance tasks.

Ecology of Human Performance (Dunn, Brown, & McGuigan, 1994)

- This model recognizes the impact one's environment has on occupational engagement. Supportive environments promote occupational engagement, while non-supportive environments (such as a hospital) hinder engagement.
- During this experience, many treatments took place in different environments (i.e. therapy gym, outdoors) to provide opportunities to leave their hospital rooms. Children were also provided with age-appropriate activities to keep in their rooms.

Synthesis of Child, Occupational Performance, and Environment In Time (SCOPE-IT) Model (Haertl, 2010)

- This model aims to enhance participation in typical childhood occupations. Motivation is recognized as a key contributing factor to child participation in treatment.
- During this experience, most sessions incorporated play, leisure, and/or self-care tasks. Internally motivating activities were chosen to improve participation in sessions.

METHODS & ACTIVITIES

- The main outcome of this Capstone Experience was to create the *Occupational Therapy Toolkit for Pediatric Oncology*, an accessible and easy-to-understand resource to guide future practice when working with a pediatric oncology population.
- Direct patient care was a critical component of this experience. Time was spent providing care in outpatient and inpatient settings, attending to 100% of site mentors' caseloads. There were additional opportunities for interprofessional collaboration through observation and participation in various meetings.
- Frequent literature reviews were completed to compare clinical scenarios to what literature considered to be best practice. Relevant terminology was explored and compiled into an easy-to-understand glossary. This was included in the toolkit.
- Surveys were created and dispersed to internal oncology OTs regarding common diagnoses and deficits seen, as well as commonly utilized assessment and intervention strategies. Reports were created comparing responses to current literature, and these reports were included in the toolkit.
- Three online continuing education courses were completed, and the host of the courses was contacted to inquire about the future of the profession in pediatric oncology care. A reflection paper and in-service presentation was created to share with the site mentors.
- The toolkit was utilized to administer episodes of care to two separate children – feedback from the site mentors determined the toolkit was appropriately used and appropriate services were provided.
- An American Occupational Therapy Association (AOTA) Fact Sheet relevant to the field of pediatric oncology was created and is currently in the drafting process.

REFERENCES

1. Buckland, N., & Mackenzie, L. (2017). Exploring the role of occupational therapy in caring for cancer survivors in Australia: A cross sectional study. *Australian Occupational Therapy Journal*, 64, 358-368. doi:10.1111/1440-1630.12386
2. Cole, M. B., & Tufano, R. (2008). Biomechanical and rehabilitative frames. In *Applied theories in occupational therapy: A practical approach*. (pp. 165-172). Thorofare, NJ: SLACK.
3. De Luca, C. R., McCarthy, M., Galvin, J., Green, J. L., Murphy, A., Knight, S., & Williams, J. (2013). Gross and fine motor skills in children treated for acute lymphoblastic leukaemia. *Developmental Neurorehabilitation*, 16(3), 180-187.
4. Dunn, W., Brown, C., & McGuigan, A. (1994). The Ecology of Human Performance: A framework for considering the effect of context. *American Journal of Occupational Therapy*, 48, 595-607. doi:10.5014/ajot.48.7.595
5. Haertl, K. (2010). A frame of reference to enhance childhood occupations: SCOPE-IT. In P. Kramer & J. Hinojosa (Eds.), *Frames of reference for pediatric occupational therapy* (266-305). Baltimore, MD: Lippincott Williams & Wilkins
6. Mohammadi, A., Mehraban, A. H., Damavandi, S. A., Zarei, M. A., & Amini, M. (2017). Participation in daily life activities among children with cancer. *Middle East Journal of Cancer*, 8(4), 213-222.
7. Siegel, R. L., Miller, K. D., & Jemal, A. (2017). Cancer statistics, 2017. *CA: A Cancer Journal for Clinicians*, 67(1), 7-30. doi:10.3322/caac.1387
8. Silver, J. K., Baima, J., & Mayer, R. S. (2013). Impairment-driven cancer rehabilitation: An essential component of quality care and survivorship. *CA: A Cancer Journal for Clinicians*, 63(5), 295-317. doi:10.3322/caac.21186
9. Sleight, A. G., & Stein Duker, L. I. (2016). Toward a broader role for occupational therapy in supportive oncology care. *American Journal of Occupational Therapy*, 70, 7004360030p1-7004360030p8. doi:10.5014/ajot.2016.018101

FINDINGS/CONCLUSIONS

- Occupational therapy practitioners have the unique skillset and knowledge to be crucial members of the pediatric oncology healthcare team.
- The *Occupational Therapy Toolkit for Pediatric Oncology* is an appropriate resource for occupational therapy practitioners and students.
- Overall, the Capstone student gained knowledge and skills pertinent to the care of children undergoing cancer treatment and achieved competence in working with this population.

IMPLICATIONS FOR OCCUPATIONAL THERAPY

- The Biomechanical frame of reference, Ecology of Human Performance, and SCOPE-IT model are all appropriate theoretical constructs that should be used to guide practice when working within pediatric oncology.
- Additional education and training applicable to pediatric oncology is recommended as these provide specific insight into the pathology of various diagnoses and how this pathology manifests into occupation-limiting impairments. It is also important for practitioners to understand that each case will present differently and providing client-centered care is imperative.
- It would be beneficial for occupational therapy programs to include information relevant to pediatric oncology within their curriculums to increase the exposure students have to occupational therapy's role within the oncology care team.
- Further research is necessary to add to the limited base of evidence surrounding this practice area and promote growth within the profession.



UNIVERSITY OF
SOUTH DAKOTA
SCHOOL OF HEALTH SCIENCES