The Role of Occupational Therapy in the Rehabilitation of

People with Lower Limb Amputation

Diane Bernis Andrew, OTD, OTR/L

Professional Poster to be presented at FOTA: November 2, 2012 in Tampa, Florida

Speaker: Diane Bernis Andrew, OTD, OTR/L

Contact Information: 109 Chardin Drive

Nokomis, FL 34275 941-408-4000

diandrew@comcast.net

Biographical Information: Diane Bernis Andrew has over 25 years of experience in rehabilitation and is vice-president of Ability Prosthetic Systems Incorporated in Salt Lake City, Utah. She has recently earned her doctoral degree in Occupational Therapy at **Rocky Mountain University of Health Professions** in Utah. Her capstone project included a Fact Sheet on Occupational Therapy & Lower Limb Amputation to be submitted to AOTA in addition to creation of an interdisciplinary course on Evidenced Based Rehabilitation with this population. She also provides school-based occupational therapy in Florida through the Sarasota County School Board.

Learning Objectives:

Objective 1: The learner will describe how occupational therapy is relevant to the rehabilitation of individuals with lower limb amputation from a past, present, and future perspective.

Objective 2: The learner will identify the valuable contributions of occupational therapy as an integral & effective team member in the interdisciplinary treatment of lower limb loss as well as the need due to growing population numbers related to lower limb amputation.

Objective 3: The learner will list valid & reliable instruments to measure the efficacy of occupational therapy interventions with individuals with lower limb amputation.

Abstract:

The rehabilitation of individuals with lower extremity limb loss was an aspect of occupational therapy from the very beginning. The first President of the American Occupational Therapy Association was George Barton, an architect who rehabilitated himself after experiencing a lower extremity amputation. This Poster illustrates use of an evidence-based perspective to recognize and support the valuable role of occupational therapy in the rehabilitation of promote people with lower limb amputation.

Methods included a comprehensive literature review and critical appraisal of research. This was used to develop materials including a continuing education course that included valid and reliable outcome measures to assess progress in addition to a proposed AOTA Fact Sheet dealing with Occupational Therapy's Role with Lower Limb Amputation. Physical rehabilitation, fall prevention, pain management, wound care, environmental adaptions, adaptive equipment, are all addressed toward projected outcomes of improved body image, improved balance, and increased independence. Economically, this would help to decrease both primary and subsequent amputations.

Connections to AOTA's Centennial Vision, Occupational Therapy Code of Ethics, and the patient Protection and Affordable Health Care Act (PPACA) are also reviewed from an evidence-based perspective to explain and to support the role of occupational therapy as an integral and effective team member in the rehabilitation of people with lower limb amputation using an interdisciplinary approach.

Results

- An AOTA Fact Sheet entitled, "The Occupational Therapy Role in Rehabilitation for the Person with a Lower-Limb Amputation" was created and submitted to AOTA for consideration. If adopted, this Fact Sheet would inform both clients and referral sources. Clients who are better informed can make better decisions.
- An Interdisciplinary Continuing Education Program, Course Evaluation form, as well as a formal course brochure were prepared.
- First course is scheduled for August 2013 in North Carolina.

Conclusions

The addition of occupational therapy can be a valuable asset in the rehabilitation of lower limb amputation. Indeed, it stems from our very origins as a profession. In order to be effective team members, it is essential that occupational therapists achieve a high level of skill and competency in this specialized are *consistently* employing principles of evidence based practice. Collaboration and close networking are essential with other key members of the interdisciplinary team: prosthetist, physician, physical therapist, client, and family members.

References

AOTA's Centennial Vision. (2006). Retrieved from

http://www.aota.org/News/Centennial/Background/36516.aspx

- American Occupational Therapy Association. (2011). The occupational therapy role in the rehabilitation of the person with upper-limb amputation [Fact Sheet]. Retrieved from AOTA website:

 www.aota.org/Practitioners/PracticeAreas/Rehab/Tools/39922.aspx
- American Occupational Therapy Association. (2009). Scope of Practice [Policy
- Statement]. Retrieved from AOTA website:

 http://www.aota.org/Practitioners/Official/Position/40617.aspx?FT=.pdf
- American Occupational Therapy Association. (2012, February 29). Occupational therapy research advances fall prevention, treatment [Press release].

 Retrieved from AOTA website: http://www.aota.org/News/Media/PR/2012-Press-Releases/Falls.aspx
- American Occupational Therapy Association. (2012). *Occupational therapy and the prevention of falls* [Fact sheet]. Retrieved from AOTA website: http://www.aota.org/Fact-Sheets/Falls.aspx
- Amputee Coalition of America. (2006). *Pain management and the amputee* [Fact sheet]. Retrieved from National Limb Loss Information Center website:

 http://www.amputee-coalition.org/fact_sheets/painmgmt.html
- Barton, G. E. (1919). *Teaching the sick: A manual of occupational therapy and reeducation*. Philadelphia, PA: W.B. Saunders.
- Binkley, J. M., Stratford, P. W., Lott, S. A., & Riddle, D. L. (1999). The Lower Extremity Functional Scale (LEFS): Scale development, measurement properties, and clinical application. *Physical Therapy*, *79*, 371-383.
- Brunel University College of Occupational Therapists. (2011). Occupational

- therapy with people who have had lower limb amputations: Evidence-based guidelines [Policy brief]. Retrieved from Brunel University College of occupational Therapy website:
- http://www.cot.co.uk/sites/default/files/publications/public/Lower-Limb-Guidelines.pdf
- Chan, B. L., Witt, R., Charrow, A. P., Magee, A., Howard, R., & Pasquina, P. F. (2007). Mirror therapy for phantom limb pain. *The New England Journal of Medicine*, 357, 2206-2207.
- Cole, M. B., & Tufano, R. (2008). *Applied theories in occupational therapy: A practical approach*. Thorofare, NJ: SLACK Incorporated.
- Department of Defense and Veteran's Health Administration. (2007, August).

 VA/DoD clinical practice guideline for rehabilitation of lower limb amputation.

 [Clinical Practice Guidelines NGC:006060]. Retrieved from National

 Guideline Clearinghouse website:

 http://www.guideline.gov/content.aspx?id=11758&search=amputation+and+
 occupational+therapy+and+limb+loss%2c+occupational+therapy%2c+and+r
 ehabilitation
- Gallagher, P., Horgan, O., Franchignoni, F., Giordano, A., & MacLachlan, M. (2007). Body image in people with lower-limb amputation: A Rasch analysis of the Amputee Body Image. *Am J Phys Med Rehabil*, 86, 205-215.
- Gallagher, P., & MacLachlan, M. (2000, May). Development and psychometric evaluation of the Trinity Amputation and Prosthesis Experience Scales (TAPES). *Rehabilitation Psychology*, *45*(2), 130-154.

- Kravitz, L. (n.d.). Improving balance and preventing falls with tai chi. Retrieved from http://www.unm.edu/~lkravitz/Article%20folder/taichi.html
- Mullins, A. (2009, February). *Aimee Mullins and her 12 pairs of legs* [Video file].

 Retrieved from

 http://www.ted.com/talks/aimee mullins prosthetic aesthetics.html
- Mullins, A. (2010, February). Aimee Mullins: The opportunity of adversity [Video
- file]. Retrieved from http://www.ted.com/talks/aimee mullins the opportunity of adversity.html
- National Limb Loss Information Center. (2008). *Amputation statistics by cause:*Limb loss in the United States [Fact sheet]. Knoxville, TN: Amputee

 Coalition of America.
- Oz, M. (Writer). (2007, November 1, 2007). Oprah [Television series episode]. In O. Winfrey (Producer), *Oprah*. Chicago, IL: ABC.
- Racy, J. C. (2002). Psychological adaptation to amputation. In H. K. Bowker, & J.W. Michael (Series Ed.), Atlas of limb prosthetics: Surgical, prosthetic, and rehabilitation principles: Ch. 28.
- Rushton, P. W., & Miller, W. C. (2002). Goal attainment scaling in the rehabilitation of patients with lower-extremity amputations: A pilot study. *Archives of Physical medicine and Rehabilitation*, 83, 771-775.
- Sackett, D. L., Rosenberg, W. M., Gray, J. A., Haynes, R. B., & Richardson, W. S. (1996, January 13). Evidence based medicine: What it is and what it isn't. *BMJ*, 312(71-72), 71-72.
- Senra, H., Oliveira, R. A., Leal, I., & Viera, C. (2011). Beyond the body image: A

- qualitative study on how adults experience lower limb amputation. *Clinical Rehabilitation*, 26(2), 180-191.
- Spiliotopoulou, G., & Atwal, A. (2011). Is occupational therapy practice for older adults with lower-limb amputations evidence-based? A systematic review.

 Retrieved from http://poi.sagepub.com/content/early/2011/11/16/0309364611428662.abstra ct
- Wegener, S. T. (2009). Self-management improves outcomes in persons with limb loss. *Archives of Physical Medicine and Rehabilitation*, *90*, 373-80.
- Wolf, S. L., Barnhart, H. X., Kutner, N. G., McNeely, E., Coogler, C., & Tingsen, X. (1996, May). Reducing frailty and falls in older persons: an investigation of Tai Chi and computerized balance training. *Journal of the American Geriatric Society*, 44, 489-497. Retrieved from www.cebp.nl/vault_public/filesystem/?ID=2489