Recreational Therapy Evidence Based Practice Day
Temple University, Department of Rehabilitation Sciences, Recreation Therapy Program
April 30, 2014

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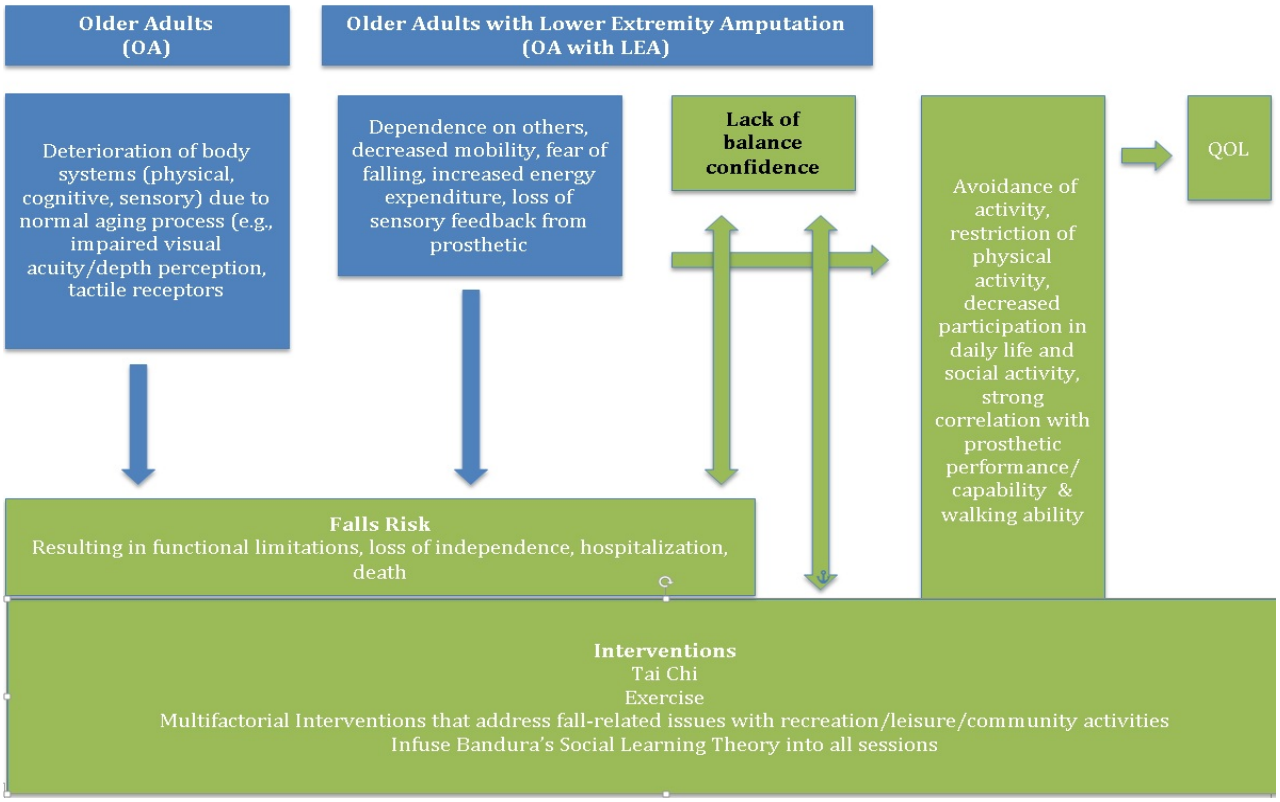
Balance Confidence and Social Activity in Older Adults with Lower Extremity Amputation: A Systematic Review

Search Terms: Amputation, older adults, social activity, intervention, fall risk, balance confidence
Years: February 2014 with no back-date restriction
Databases: AgeLine, CINAHL, Google Scholar
Number of Articles: 7

Summary of Research Findings:
Deficits in balance can be caused by a variety of factors, including physical, sensory, cognitive, & nervous system impairment (Rogers, 2012). Within older adults, these systems begin to deteriorate due to the normal aging process causing significant balance impairment resulting in falls (↓ visual acuity,↓ depth perception,↓ peripheral field,↓ sensitivity to low spatial frequencies, & ↓ skin sensitivity which decreases input from tactile, pressure, and vibration receptors making it difficult to walk, stand, and detect heel-to-toe body weight shifts to maintain balance (Rogers, 2012). Sakakibara et al. (2011) found that 30-33% of community-dwelling older adults report a fall, of which 62% result in hospitalization (& 20% die) (CIHI, 2004). In older adults who have a lower extremity amputation (OALEA), the prevalence of falls is almost double that of the general older adult population (Miller et al., 2001a) due to the added challenges of dependence on others, ↓mobility, fear of falling, ↑ energy expenditure, loss of sensory feedback from prosthetic, & lack of balance confidence (BC) (Miller et al., 2002). BC (self-confidence to maintain one's balance) was found to be significantly prevalent in OALEA (Miller et al., 2001a), additionally causing ↓participation in daily and social activity, avoidance of activity, and restriction of physical activity (Miller et al., 2001b; Miller & Deathe, 2011, Rand, 2011). Miller & Deathe (2011) found that BC in OALEA is a better predictor of engagement in social, daily, and physical activities than actual measures of physical performance; and is strongly correlated to prosthetic performance, prosthetic capability, and social activity participation. BC in OALEA is also associated with mobility capability and mobility performance (Miller et al., 2001b), as well as falls and deserves more attention in healthcare (Miller et al., 2002). Within the rehab literature, low BC was found in OALEA who were recently discharged from inpatient rehab (Miller & Deathe 2011). The authors found that patients' BC after discharge from prosthetic rehab was low and that the scores did not improve over 3 months post-discharge despite having improvements in their walking ability. The authors stated that despite evidence suggesting that the mean BC in OALEA is low (and its negative impact on mobility and social engagement), BC still remains under-addressed in prosthetic rehab. Although Miller & Deathe (2011) stated that change in BC may be indirectly obtained through traditional rehab; they advocate for programs to be augmented with strategies based on Bandura's theory to ↑ confidence further promoting improved social activity. Only one study looked into what interventions are most effective in increasing BC in OALEA. Rand et al. (2011) conducted a systematic review of the literature in 2009 with no back-date restrictions on interventions to improve BC in older adults who did not have a neurological condition (including OALEA). Findings indicated that low BC in older adults can be addressed most effectively by Tai Chi (medium significant effects found). Exercise and multifactorial intervention (addressing fall-related issues while reducing barriers in the person's environment through home visits, home modifications, medication prescription, and falls risk education) were also found to be beneficial but the effect size was smaller.

Knowledge Translation Plan:
Based on these findings, recreational therapists should include BC as a primary area of intervention for OALEA to prevent falls and improve social engagement, prosthetic capability, prosthetic performance, and walking ability. Recreational therapists should consider the use of Tai Chi related interventions & engagement in physical activity, as active ingredients within a treatment plan. Furthermore, recreational therapists should be keenly aware of their role in addressing fall-related issues within recreation, leisure, and community activities and infuse Bandura's Social Learning Theory into such sessions, to increase BC. See Knowledge Translation Graphic on next page.



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