Psychological or Emotional Impairment after Stroke

What is the evidence for the effectiveness of interventions to improve occupational performance for those with psychological and/or emotional impairment after stroke?

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Guided Research Process

- AOTA Collaboration
  - Marian Arbesman, PhD, OTR/L
  - Deborah Lieberman, MHSA, OTR/L, FAOTA
- Focused on Level I – III studies published between 2003 and 2012

Significance of the Review Question

- Psychological and/or emotional impairment occur in 30 – 50% of persons post-stroke (Roger, Go, Lloyd-Jones, Benjamin, Berry, Borden, et al., 2012)
- Most common conditions include:
  - Depression
  - Anxiety disorders
  - Psychoses
  - Post-stroke dementia (Falk-Kessler, 2011)

Consequences of psychological and/or emotional impairment post-stroke:
- Impedes rehabilitation
- Impairs physical function
- Impairs cognitive function
- Increases stress on caregivers
- Increased risk of death
- Increased risk of suicide
- Greater morbidity
- Increased dependency
- Higher use of drugs and alcohol
- Increases use of health resources
- Poor compliance with treatment of co-morbidities

Search Process & Results

- 2261 articles reviewed
- 41 articles met criteria
- Five categories identified

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<th>Categories</th>
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<td>3. Care Coordination</td>
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<td>4. Education</td>
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<td>5. Community Rehabilitation</td>
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Results - Exercise

- Level I: Moderate evidence
  - Strengthening intervention—HRQOL-Mental component at 10-wks (Olney, Nymark, Brouwer, Culham, Day, Heard, et al., 2006)
  - ROM intervention—Depression measure (Tseng, Chen, Wu, & Lin, 2007)

- Level I: Insufficient evidence
  - Progressive resistance training—Mental health or depression measures (Cubelli, Loffredda, Rea, Phillips, Stein, Prontera, et al., 2004; Sina, Galler, Taylor, Dodd, Stensson, & Joubert, 2009)
  - Tai Chi—Mental health or depression measures (Taylor-Piliae & Coull, 2011)
Level I: Insufficient evidence
- Very early mobilization—Depression & anxiety measures at 7 days (Cumming, Collier, Thrift, & Bernhardt, 2008)
- Other exercise programs—Intensive exercise, ergometry, bilateral arm exercises, walking, treadmill, home based exercise—Short term improvement on depression & anxiety measures, but not long term (Wadles, Gorcani-Hedstrom, Lindstrom, & Wester, 2010; Li, Staudenr, Richards, Riger, Perma, Reker, et al., 2006; Langhammer, Stanghelle, & Lindmark, 2008; Lemon, Caron, Gaffey, Stephen, & Blake, 2006; Read, Greg, Cunningham, Lewis, Dines, Saunden, et al., 2007; Morris, van Wijk, Joyce, Ogston, Cole, & Mac veteran, 2008; Sahlbach, Majo, Rotschild-Elston, Hanley, Richards, & Wood-Dauphinee, 2005; Smith & Thompson, 2008; Staudenr, Duncan, Peters, Reker, Min, Li, et al., 2005)

Level II: Insufficient evidence
- Exercise & recreation activities (Rand, Eng, Liu-Arnbrw, & Tawashy, 2010)
- Community based exercise (Stuart, Bernard, Mack, Tavelani, Segaren, Mayer, et al., 2009)

Limitations of Reviewed Studies
- Wide variety of types and severity of stroke, participant ages, time post-stroke, setting (acute, rehab, community)
- Several studies had small sample sizes
- Studies excluded persons who had aphasia and cognitive deficits
- Intervention protocols were often not described
- Treatment fidelity was not addressed
- Most interventions were not implemented by OT
- Many studies used depression, anxiety, or HRQOL measures as secondary measures
- Measures of depression, anxiety, and HRQOL were self-report

Results-Exercise
- Level I: Insufficient evidence
- Level I: Moderate evidence
- Level I: Mixed evidence
- Level II: Insufficient evidence

Results-Care Coordination
- Level I: Mixed evidence
- No significant difference found between IG and CG
- Care coordination in the community—HRQOL & depression measures
- Family support Organizer—Depression or anxiety scores
- Day service—Depression or anxiety

Results-Behavioral Interventions
- Level I: Moderate evidence
- Level I: Insufficient evidence

Results-Education Interventions
- Level I: Moderate evidence
- Chronic Disease Self-management education—No difference on mood QOL measure
- Stroke education program—Computer-generated education package—no reduction in anxiety and depression

Results-Community Rehabilitation
- Level I: Moderate evidence
- Intensive vs. non-intensive home based rehabilitation
- Community-based OT—HRQOL mental health measures
- Community-based OT intervention to improve mobility—psychological well-being measure

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Implications for Practice: Summary

- Occupational therapists are uniquely qualified to address both psychological and physical impairments post-stroke
- Evidence for effective interventions includes:
  - Moderate evidence for motivational interviewing, problem-solving therapy, and behavioral interventions
  - OT can deliver these with specialized training and delivered within scope of practice
  - Moderate evidence for strengthening and ROM
  - OT should do this in occupation-based activities
  - Mixed evidence for inpatient care coordination and community outreach
  - OT can work on the team to develop and implement programs
  - Moderate evidence for leisure education and stroke education
  - OT is highly qualified to deliver
  - Moderate evidence for more intensive home-based rehabilitation
  - OT should recommend home health OT and greater number of home rehab visits

Implications for Research

- More research is needed with OT specific interventions
- Must use a well-defined protocol, treatment manual
- Must measure treatment fidelity to ensure adherence to the protocol and differentiation from usual care
- Include participants with aphasia and cognitive deficits

This presents an opportunity for occupational therapists to perform much needed research!

Thank you!

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