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 (Hackett, Anderson, House, Newhall, 2008; Whyte, Mulsant, Rovner, & Reynolds, 2006)
  - 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>III</th>
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<td>3. Care Coordination</td>
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<td>4. Education</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 (Yang, Chen, Wu, & Lin, 2007)
- Level I: Insufficient evidence
  - Progressive resistance training—Mental health or depression measures (Coutinho, Liddle, Bean, Phillips, Stein, Frontiera, et al., 2004; Sere, Geline, Taylor, Doff, Jesperson, & Joublert, 2006)
  - Tai Chi—Mental health or depression measures (Taylor-Piliae & Coull, 2011)

http://dx.doi.org/10.5014/ajot.2015.691009
Results - Exercise

- **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 (Hotvinger, Groenen-Hoedtrom, Lindstrom, & Wester, 2010; Li, Statzeki, Richards, Rigler, Pena, Reker, et al., 2006; Langhammer, Stanghelle, & Lindmark, 2008; Lemon, Carr, Gaffney, Stephenson, & Blake, 2006; Reid, Greg, Cunningham, Lewis, Dinnen, & Thacker, 2007; Morris, Vrijens, Joie, Ogston, Cole, & MacKler, 2008; Sabach, Mayo, Rothchild, Klotz, Harvey, Richards, & Wood-Dauphinee, 2005; Smith & Thompson, 2008; Statzeki, Duncan, Pena, Reker, Min, & Li, et al., 2005)

- **Level II: Insufficient evidence**
  - Exercise & recreation activities (Rand, Eng, Liu-Ambrose, & Tavehsky, 2010)
  - Community Based Exercise (Stuart, Bernardi, Macko, Taviani, Segaren, Mayer, et al., 2009)

Results - Care Coordination Interventions

- **Level I: Mixed evidence**
  - Significant difference found between IG and CG
    - Inpatient care coordination—Mental QOL & depression scores improved (Cahoon, 2000)
    - Post-discharge support and outreach—Anxiety & emotional distress scores significantly lower (Baker, 2004; Burton & Gibson, 2005)
  - No significant difference found between IG and CG
    - Care coordination in the community—HRQOL & depression measures (Mayo, Nadeau, Ahmed, White, Gird, Huang, et al., 2018)
    - Family support Organizer—Depression or anxiety scores (Lincoln, Francis, Liley, Sharma, & Summerfield, 2005; Tilley, Coshall, McWhaly, Danesi, & Wride, 2005)
    - Day service—Depression or anxiety (Crom, Phillips, & Walker, 2004)

Results - Behavioral Interventions

- **Level I: Moderate evidence**
  - Motivational interviewing—Depression measures (Mitchell, Velt, Beeker, Bzostak, Cain, Prun, et al., 2009)
  - Problem-solving therapy—CG 2.2 times more likely to develop depression than IG (Robinson, Jorge, Morris, Acorn, Sokoloff, Small, et al., 2000)
  - Psychosocial/behavioral intervention + Antidepressant medication—Reduces depression (Mishell, Velt, Bzostak, Cain, Prun, et al., 2009)
  - Knowledge & behavior therapy—Depression & QOL (Chang, Zhang, Xia, & Chen, 2011)

- **Level I: Insufficient evidence**
  - Chronic Disease Self-Management Program—Depression or anxiety scores (Gladman, Avery, Walker, Dyar, & Groom, 2004)
  - Leisure education program—Depression reduced (Clark, Rubenach, & Winsor, 2003; Hoffman, McKenna, Wild, & Read, 2007)
  - Stroke education program—Reducing depression or anxiety (Buys, & Charker, 2006)
  - Stroke information package, Computer-generated education package—no reduction in anxiety and depression (Clark, Rubenach, & Winsor, 2003; Hoffmann, McKenna, Wildall, & Read, 2007)

Results - Education Interventions

- **Level I: Moderate evidence**
  - Leisure education program—Depression reduced (Desrois, Noreau, Richardson, Cameron, Formica, Vaghiyelas, et al., 2000)
  - Stroke education program—Reduction in anxiety, but not depression (Smith, Forder, & Young, 2004)

- **Level I: Insufficient evidence**
  - Chronic Disease Self-Management education—No difference on mood QOL measure (Randall, Calabria, Kupers, Forder, & Wright, 2000)
  - Stroke information package, Computer-generated education package—no reduction in anxiety and depression (Clark, Rubenach, & Winsor, 2003; Hoffmann, McKenna, Wildall, & Read, 2007)

Results - Community Rehabilitation

- **Level I: Moderate evidence**
  - Intensive vs. non-intensive home based rehabilitation (greater number of rehab team visits)—HRQOL, anxiety, & depression improved (Ryan, Enderby, & Rigby, 2004)

- **Level I: Insufficient evidence**
  - Community-based OT—HRQOL mental health measures (Egan, Hasker, Laporthe, Mellette, & Carter, 2007)
  - Community-based OT intervention to improve mobility—psychological well-being measure (Sugan, Gladman, Avery, Walker, Dyar, & Groom, 2004)

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
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 with 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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