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, Nabel, 2008; Whyte, McKaert, 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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<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 (Cutler, Lifton, Siew, Phillips, Stein, Frontiera, et al., 2004; Sinn, Gales, Taylor, Dobb, Jespersen, & Joubert, 2006)
  - Tai Chi—Mental health or depression measures (Taylor-Piliae & Couto, 2011)
Results - Exercise

- Level I: Insufficient evidence
  - Very early mobilization—Depression & anxiety measures at 7 days (Cumming, Collar, Threlfall, & 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 (Hartwig, Gossen-Heftkotten, Lindhorst, & Wibest, 2010; Li, Stenders, Richards, Rigler, Peena, Reker, et al., 2006; Langhammer, Stanghelle, & Lindmark, 2008; Lemon, Carley, Gaffney, Stephenson, & Blake, 2008; Reed, Ging, Cunningham, Lewis, Dinna, Saunderson, et al., 2007; Morris, van Wijl, Joos, Ojgast, Cole, & MacVicar, 2008; Salbach, Mayo, Rolleshield-Ekstrand, Hanley, Richards, & Wood-Dauphinee, 2005; Smith & Thompson, 2008; Stenders, Duncan, Peena, Reker, Min, Lai, et al., 2005)

- Level II: Insufficient evidence
  - Exercise & recreation activities (Rand, Eng, Liu-Ambrose, & Tewriter, 2010)
  - Community based exercise (Stuart, Berns, Mecko, Taviani, Segaren, Mayer, et al., 2009)

Results - Behavioral Interventions

- Level I: Moderate evidence
  - Motivational interviewing—Depression measures (Wish, Avorn, Diana, Dickbro, Jak, Lightbod, et al., 2007)
  - Problem-solving therapy—CG 2.2 times more likely to develop depression than IG (Robinson, Jorge, Monzon-Acevedo, Souadden, Small, et al., 2000)
  - Psychosocial/behavioral intervention + Antidepressant med—Reduces depression (Mitchell, Vith, Becker, Brasil, Kan, Ful, et al., 2009)
  - Knowledge & behavior therapy—Depression & QOL (Chang, Zhang, Xia, & Chen, 2011)

- Level I: Insufficient evidence
  - Behavior modification & risk factor control, life-review therapy, control cognitions, CBT—Reducing depression or anxiety (Alhabban, Craig, McAlpine, Langhome, & Ellis, 2009; Ellis, Rodger, McAlpine, Langhome, 2005; Dena, 2004; Johnston, Bondell, Joos, Pollard, Morrison, Francesa, et al., 2007; Lincoln & Tannahar, 2003)

- Level II: Insufficient evidence
  - Post-discharge support and outreach—Anxiety & emotional distress scores significantly lower (Boak, 2004; Burton & Gibson, 2005)

Results - Care Coordination Interventions

- Level I: Mixed evidence
  - Significant difference found between IG and CG
    - Inpatient care coordination—Mental QOL & depression scores improved (Cabonne, 2006)
    - Post-discharge support and outreach—Anxiety & emotional distress scores significantly lower (Boak, 2004; Burton & Gibson, 2005)

- Level II: Insufficient evidence
  - Care coordination in the community—HRQOL & depression measures (Mayo, Nadeau, Ahmed, White, Grist, Huang, et al., 2008)
  - Family support Organizer—Depression or anxiety scores (Lincoln, Franci, Lieby, Shime, & Summerville, 2003; Tilling, Coshell, McKechnie, & White, 2005)
  - Day service—Depression or anxiety (Cor, Phillips, & Walker, 2004)

Results - Education Interventions

- Level I: Moderate evidence
  - Leisure education program—Depression reduced (Desrochers, Noreau, Richard, Cartier, Fontaine, Vachon, et al., 2007)
  - Stroke education program—Reduction in anxiety, but not depression (Smith, Forster, & Young, 2004)

- Level I: Insufficient evidence
  - Chronic Disease Self-Management education—No difference on mood QOL measure (Kendall, Catalani, Kiljano, Forster, Ryan, & Chater, 2006)
  - Stroke information package, Computer-generated education package—no reduction in anxiety and depression (Clark, Rubenzach, & Witmar, 2003; Hoffman, McKenna, Worrall, & 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, Endsey, & Rigby, 2004)

- Level I: Insufficient evidence
  - Community-based OT—HRQOL mental health measures (Egan, Keasler, Laporte, McCaff, & Carter, 2007)
  - Community-based OT intervention to improve mobility—psychological well-being measure (Guzan, Gladman, Avery, Walker, Dyas, & Geccen, 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 & 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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