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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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)

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>4. Education</td>
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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

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

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 (Cutzela, Wellman, Shem, Phillips, Stern, Frontiez, et al., 2004; Sima, Galea, Taylor, Drost, Jespersen, & Joubert, 2008)
  - Tai Chi—Mental health or depression measures (Taylor-Piliae & Coull, 2011)
Results - Exercise

- Level I: Insufficient evidence
  - Very early mobilization—Depression & anxiety measures at 7 days (Cunningham, Colfer, 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 (Hawke, Gegey, Landrum, Lauten, & Wester, 2010; Li, Stadnieks, Richards, Rigler, Perre, Reker, et al., 2006; Langhammer, Stanghellini, Lintunen, & Lindmark, 2003; Lemmon, Carr, Gaffney, Stephen, & Blake, 2009; Massing, Wigg, Cunningham, Lewis, Diner, Saunders, et al., 2007; Morris, van Wyk, Joyce, Ogston, Cole, & MacValler, 2008; Salbach, Mays, Rottschau, Enderby, Harvey, Richards, & Wood-Dauphinee, 2005; Smith & Thompson, 2008; Stadnieks, Duncan, Perre, Reker, Min, Lai, et al., 2005)

- Level II: Insufficient evidence
  - Exercise & recreation activities (Hand, Eng, Lee-Armstrong, & Tawseley, 2010)
  - Community based exercise (Stuart, Benvenutti, Macia, Tavani, Seganti, Mayer, et al., 2009)

Results - Behavioral Interventions

- Level I: Moderate evidence
  - Motivational interviewing—Depression measures (Vitaliano, Anton, Deane, Dickmann, & Lightbourn, et al., 2007)
  - Problem-solving therapy—CG 2.2 times more likely to develop depression than IG (Robinson, Jorge, Mason, Azon, Solalain, Small, et al., 2000)
  - Psychosocial/behavioral intervention + Antidepressant med—Reduces depression (Mitchell, Vieth, Beider, Bazun, Cain, Frum, et al., 2009)
  - Knowledge & behavior therapy—Depression & QOL (Chang, Zhang, Xu, & Chen, 2011)

- Level I: Insufficient evidence
  - Behavior modification & risk factor control, life-review therapy, control cognitions, CBT—Reducing depression or anxiety (Abulhusn, Craig, McAlpine, Langthorne, & Ellis, 2009; Ellis, Rothery, McAlpine, Langthorne, 2005; Davis, 2004; Johnston, Bollard, Joyce, Poland, Morrison, Frances, et al., 2007; Lincoln & Flannaghan, 2003)

Results - Care Coordination Interventions

- Level I: Mixed evidence
  - Significant difference found between IG and CG
    - Inpatient care coordination—Mental QOL & depression scores improved (Cumming, Colfer, Thrift, & Bernhardt, 2008)
    - 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, Naduez, Ahmed, White, Gost, Huang, et al., 2008)
    - Family support Organizer—Depression or anxiety scores (Lincoln, Francis, Lilley, Shanna, & Summerfield, 2003; Titting, Coshall, Michielett, Danmark, & Wolfe, 2005)
    - Day service—Depression or anxiety (Com, Phillips, & Walker, 2004)

Results - Education Interventions

- Level I: Moderate evidence
  - Leisure education program—Depression reduced (Deeseoanu, Noaeu, Richel, Carabines, Fortuna, Vagacices, et al., 2007)
  - 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 (Kendall, Clayden, Kujers, Phifer, Buxa, & Chaker, 2006)
  - Stroke information package, Computer-generated education package—no reduction in anxiety and depression (Clark, Rubenach, & Winstan, 2002; Hoffman, McKenner, Winstan, & 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, Edwes, & Rigby, 2004)

- Level I: Insufficient evidence
  - Community-based OT—HRQOL mental health measures (Egan, Kastler, Laporte, Meccoli, & Carter, 2007)
  - Community-based OT intervention to improve mobility—psychological well-being measure (Ogun, Gladman, Avery, Walker, Dyer, & Gecen, 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 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 & 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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