A systematic review of rehabilitation interventions that prevent and treat depression after stroke in individuals with aphasia

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Why a systematic review?

• Overall aim is to investigate the **evidence-practice gap** in managing **mood** and **depression** in post-stroke aphasia.

• **Systematically** search for evidence within the stroke and aphasia fields.

• Based on **mental healthcare models**, we want to know what interventions can **prevent** and **treat depression** in post-stroke aphasia.

• Interested in **behavioural type interventions** delivered by various stroke health disciplines e.g SLT, psychology, OT, PT.
Overview

• Background research literature

• Stepped psychological care after stroke

• Research questions

• Method

• Results including adapting stepped psychological care in aphasia rehabilitation

• Clinical implications

• Future research agenda
We know...

- Depression is **common** after **stroke** – approx one third of the population (Hackett et al., 2000)
  
  - **high incidence** in post-stroke aphasia (70% at 3 months; 62% at 12 months)
  
  - major depression **increased from 11% to 33%** across the first 12 months post onset of aphasia (Kauhanen et al., 2000)
  
- Current Australian stroke outcome sets show **lack of psychological care**
  
  - Only 6% in acute care and 32% in rehab had a recommended psychology **assessment**
  
  - Only 32% offered **counselling** (National Stroke Foundation, 2014)
Why a lack of psychological care?

- **shortage** of psychologists (Australian Psychological Society, 2012)

- SLTs and other MDT members report **reduced confidence** in counselling (Vickers et al., 2007) and a **need for** training in psychological care (Sekhon et al., 2015)

Is **stepped psychological care** after stroke (Kneebone, 2016) the answer?
What is stepped psychological care? (Kneebone, 2016)

- A **multidisciplinary** model of care to address **psychological problems** after stroke including **depression**

- 4 steps - **Level 1 to 4** with intensity and speciality of therapy **increasing** at **higher levels** of care

- **Designed** to be responsive to a person’s symptoms, recovery and individual needs

- **Trained** health professionals deliver **mood screening**, **counselling** and **therapy at lower less intense** levels of care
Stepped psychological care after stroke

Level 1

Sub-threshold problems in mood
Level 2

Level 2

Mild to moderate mood impairment

Sub-threshold problems in mood
Level 3

- Level 3: Severe and persistent mood impairment
- Level 2: Mild to moderate mood impairment
- Level 1: Sub-threshold problems in mood
Level 4

- Severe mood impairment and challenging behaviours
- Severe and persistent mood impairment
- Mild to moderate mood impairment
- Sub-threshold problems in mood
Interventions for stroke population
Level 1

Level 1 Routine assessment; post-stroke psychological information provision and support; prevention strategies
Intervention
Level 2

Level 2
modified CBT;
goal setting, relaxation training, antidepressant medication

Levels 1 & 2
goal setting, problem solving

Level 1
Routine assessment; post-stroke psychological information provision and support; prevention strategies
Intervention
Levels 3 & 4

**Level 4** Behavioural specialist services

**Levels 3 & 4** One to one approaches with mental health specialists; clinical psychology & neuropsychology for impaired cognition; antidepressant medication

**Level 2** Behavioural activation; mCBT; goal setting, relaxation training, antidepressant medication

**Levels 1 & 2** goal setting, problem solving

**Level 1** Routine assessment; post-stroke psychological information provision and support; prevention strategies
What is the evidence for interventions in aphasia?

• Which rehabilitation interventions \textit{prevent or treat depression} after stroke for people with aphasia and their significant others?

• Which of these interventions may be \textit{considered for use within a stepped psychological care} model?

• What \textit{communication strategies} were used within interventions?
Method

- Followed the Preferred Reporting of Items for Systematic review and Meta-Analyses (PRISMA statement) (Moher et al., 2009)
Method

• **Searched databases** Medline, PsycINFO, CINAHL, Cochrane using 16 expanded terms from the question based on PICO

• **Population** = individuals with post-stroke aphasia and/or significant other, **Intervention** = therapy or treatment, **Comparison** = n/a, **Outcome** = depression

Field: Subject terms: ‘stroke’ OR ‘stroke survivors’ OR ‘stroke patients’
OR Field: Subject terms: ‘aphasia’ OR ‘dysphasia’ OR ‘language impairment’ OR ‘acquired language disorder’
AND Field: Subject terms: ‘depression’ OR ‘depress*’ OR ‘low mood’ OR ‘emotional distress’ OR ‘psychological distress’
AND Field: Subject terms: ‘therapy’ OR ‘therap*’ OR ‘intervention’ OR ‘treatment’

• **Hand searched** reference lists and **consulted other researchers** in the field
Inclusion/exclusion criteria

**Inclusion criteria**
- Rehab intervention for stroke survivors and/or significant others
- Individuals with post-stroke aphasia
- Original data and primary or secondary depression outcomes
- Mixed clinical population: > 25% of sample with stroke and aphasia
- English and peer-reviewed

**Exclusion criteria**
- Rehab intervention with medical treatment e.g antidepressants
- Participants with underlying neurological conditions e.g dementia
Method

- Eligible studies graded for level of evidence based on the Australian NHMRC guidelines
- Assessed the methodological quality:
  - PEDRO scale for RCTs and non-RCTs
  - SCED scale for single case designs
Results

Identification

No. of records identified through database searching n=4,315

No. of records identified through other sources n=14

No. of records after duplicates removed n=3,160

Screening

No. of records with titles and abstracts screened n=3,160

No. of records excluded based on inclusion/exclusion criteria n=2,721

Eligibility

No. of potentially relevant full text articles evaluated n=439

43% of studies had no or inadequate detail of individuals with aphasia within stroke sample n=172

Included

No. of full text articles included for synthesis n=38
Summary of interventions

<table>
<thead>
<tr>
<th>Study design</th>
<th>Number of studies</th>
<th>NHMRC level</th>
<th>PEDRO range /10</th>
<th>SCED range /10</th>
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<tbody>
<tr>
<td>RCT</td>
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<td>ii</td>
<td>4 - 9</td>
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<tr>
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<td>iii-2</td>
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<tr>
<td>Single case</td>
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<td>iii-3</td>
<td>-</td>
<td>6 - 10</td>
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<tr>
<td>Case series</td>
<td>8</td>
<td>iv</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mixed methods</td>
<td>3</td>
<td>iv</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Considered ‘high’ in methodological quality

16 trials
5 single case
Types of intervention?

• Prevention of depression
  • Depression outcome as a primary measure
  • Prevention – participant group did not present with significant depression, early phase therapy, usually up to 6 months post onset

• Treatment of depression
  • Depression outcome as primary measure
  • Participants fulfilled depression criteria within the study

• Stroke rehabilitation
  • Depression outcome as a secondary measure
## Interventions

<table>
<thead>
<tr>
<th>Type of intervention</th>
<th>Number of studies</th>
<th>Content of intervention</th>
</tr>
</thead>
</table>
| Preventive                   | 4                 | 1 x psychosocial and communicative functioning  
2 x psychosocial functioning |
| Treatment                    | 3                 | 3 x psychosocial functioning |
| Stroke rehabilitation        | 31                | 9 x Communicative  
8 x psychosocial  
7 x physical  
5 x multidisciplinary rehabilitation and transition  
2 x cognitive |
Prevention

**Preventive** interventions (n=4)

- improvements in depression outcomes over time in 3 of 4 studies but not statistically significant
Treatment

Treatment interventions

- strongest evidence found for behavioural therapy (Thomas et al., 2013)
- some evidence for web-based psychosocial program (Smith et al., 2012)
- some evidence for telephone-based problem-solving (Pfeiffer et al., 2014)
Stroke rehabilitation

Rehabilitation for communicative functioning
- mixed results; positive trends in mood measures but no statistically significant findings
  - biographic-narrative treatment (Corsten et al., 2015)
  - communication partner training (Saldert et al., 2013)
  - communication group (Brumfitt & Sheeran, 1997)

Rehabilitation for psychosocial functioning
- improved mood but not statistically significant in use of
  - self-management book (Jones et al., 2009)
- positive qualitative themes from
  - aphasia choir (Tamplin et al., 2013)
  - aphasia carer support group (Pound et al., 2001)

Multidisciplinary rehabilitation and transition
- statistically significant less depressive symptoms
  - higher goal achievement score (GAS) (Brock et al., 2009)
What does stepped psychological care look like for people with aphasia?

- So based on the findings of this systematic review the interventions with strongest evidence are included within the model
Translating stepped psychological care for aphasia

**Level 1**

Routine assessment; psychological information provision and group support; biographic-narrative therapy; communication partner training; aphasia choir; self-management workbook; goal setting.
Translating stepped psychological care for aphasia

Level 1

Level 2: Behavioural therapy; psychosocial support and problem-solving; goal setting; antidepressant medication
Translating stepped psychological care for aphasia

Level 4

Level 3

Level 2

Level 1

Level 4 Behavioural specialist service

Levels 3 & 4 One to one therapy approaches; Mental health specialists; clinical psychology and if cognition impaired then neuropsychology also; one to one therapy approaches; antidepressant medication
Communication strategies

• Tailored to **participants’ needs** and **interests** (Corsten et al., 2015; Thomas et al., 2013)

• **Augmentative communication** strategies such as pictograms, visual analogue scales, flip charts, enlarged font size, simplified language

• **Assistance** to PWA by significant other e.g. reading out questionnaire items, encouraging response such as gesture

• **Different modes** of delivery e.g. web, telephone, CDs, audio and/or video recordings, online talking, email and technical assistance (Smith et al., 2015)
Clinical implications

• **Stepped psychological care** in post-stroke aphasia requires further investigation to evaluate barriers and facilitators to translation in clinical practice

• Stroke staff require **support and training** to deliver assessment and therapeutic interventions
Future research agenda

• **Include** PWA within stroke studies and to **adequately describe their communication and data sets**

• **standardised** report of depression using psychometrically adequate tools and clinical interviews

• **consideration of timing** of intervention i.e early for prevention versus chronic phase

• parameters for **clinical significance** of intervention on mood scores
Thank you!

Questions?

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References


• 12. PEDro Physiotherapy evidence database [Internet]. NSW, Australia: Centre of Evidence-based Physiotherapy (CEBP), The George Institute for Global Health; 1999- [cited 2016 February 8]: Available from: www.pedro.org.au


