PSYCHOLOGICAL ADJUSTMENT AFTER STROKE

EPIDEMIOLOGY, IMPACT, ASSESSMENT, AND TREATMENT EVALUATION

Reg Morris 2017
PLAN

• EPIDEMIOLOGY OF PSYCHOLOGICAL CONDITIONS AFTER STROKE
  • THE NATURE, FREQUENCY AND EFFECTS OF CONDITIONS.
• ASSESSMENT AND SCREENING FOR PSYCHOLOGICAL CONDITIONS
• INTERVENTIONS FOR PSYCHOLOGICAL CONDITIONS
  • DRUG TREATMENTS
  • PSYCHOLOGICAL INTERVENTIONS
• EVALUATING INTERVENTIONS: ARE WE GETTING IT RIGHT?
  • CLINICAL TRIALS (RCTS)
  • OTHER FORMS OF TREATMENT EVALUATION
PSYCHOLOGICAL ISSUES AFTER STROKE ARE COMMON

• **DEPRESSION PREVALENCE AFTER STROKE IS 33%** WITH A **CUMULATIVE INCIDENCE OF 55% OVER 10 YEARS** (AYERBE, AYIS, WOLFE, & RUDD, 2013; HACKETT, YAPA, PARAG, & ANDERSON, 2005).


• **MODERATE AND SEVERE FATIGUE AFFECTS 57%** (LERDAL ET AL., 2011).

• **EMOTIONALISM AFFECTS ABOUT 16%** (HOUSE ET AL. 1989).
SUB-CLINICAL PSYCHOLOGICAL DISTRESS IS EVEN MORE COMMON AFTER STROKE

• ‘LOSS’ OF IDENTITY/SENSE OF SELF IS COMMON (ELLIS-HILL & HORN, 2000; PALLESEN, 2014).

• SELF-ESTEEM IS OFTEN REDUCED (VICKERY ET AL., 2008.; KEPEL & CROWE, 2000).

• 73% OF STROKE SURVIVORS LACK CONFIDENCE,
• 56% FEEL PEOPLE TREAT THEM DIFFERENTLY
• 55% FEEL UNABLE TO CARE FOR THEIR FAMILIES AS BEFORE.

(THE STROKE ASSOCIATION, 2016)
MANY STROKE SURVIVORS HAVE MORE THAN ONE PSYCHOLOGICAL ISSUE

40% of stroke survivors at any given time are affected by one or more of:

- Depression, anxiety, cognitive impairment, sexual problems, attitudes to recovery, identity change and isolation (McKevitt et al., 2010)

60% of stroke survivors say they feel depressed and 67% say they feel anxious. (The Stroke Association, 2013)
problems doing things  
frustration  
anxiety  
trauma  
concentration  
impaired hearing  
difficulties with relationships  
identity  
sight and sensation  
uncontrollable crying  
anger  
impaired space awareness  
altered body-image  
problems with socialising and meeting people
RESEARCH INTO EPIDEMIOLOGY
THE EFFECTS OF PSYCHOLOGICAL CONDITIONS ARE SERIOUS AND UTILISE SCARCE RESOURCES

PSYCHOLOGICAL CONDITIONS THAT OCCUR AFTER STROKE ARE ASSOCIATED WITH:

- POORER SOCIAL FUNCTIONING. (D’ALISA S ET AL. 2005)
- POORER FUNCTIONAL ABILITY. (SHIMODA ET AL., 1998)
- INCREASED MORTALITY (AYERBE ET AL., 2013).
- INCREASED HEALTHCARE UTILISATION (APPLEBY, THOMPSON, & GALEA, 2012; GHOSE, WILLIAMS, & SWINDLE, 2005; VAN EEDEN ET AL., 2016)
- INCREASED COST TO HEALTHCARE (NAYLOR ET AL, 2012)
RESEARCH INTO EFFECTS/OUTCOMES
# Validated Assessments and Screens for Psychological Conditions in Stroke

## Mood
- Hospital Anxiety and Depression Scale (HADS)
- Patient Health Questionnaire -9 (PHQ-9)
- General Anxiety Disorder-7 (GAD-7)
- Beck Depression Inventory (BDI) & Hamilton Depression Rating Scale (HDRS)
- Brief Assessment Schedule Depression Cards (BASDEC)
- Signs of Depression Scale (SODS)
- Stroke Aphasic Depression Questionnaire (SADQ)
- Behavioural Outcomes of Anxiety Scale (BOA)
- General Health Questionnaire (GHQ- 28)

## Cognition
- Cambridge Cognition Examination (CAMCOG)
- Montreal Cognitive Assessment (MOCA)
- Trail Making Test (TMT)
- Executive Function Performance Test (EFPT)
- Clock Drawing Test (CDC)

## Quality of Life
- Stroke Specific Quality of Life Scale (SS-QOL)
Measures of several facets of psychological distress are not yet validated for stroke. (e.g. Self-esteem, trauma, identity change)
PSYCHOLOGY RESEARCH DONE GOOD
BUT WHAT ABOUT TREATMENTS FOR PSYCHOLOGICAL CONDITIONS?
DRUG TREATMENTS: (ISWP GUIDELINES, 2016)

FATIGUE

• SOME PHARMACOLOGICAL INTERVENTIONS (ANTIDEPRESSANTS OR STIMULANTS), PSYCHOLOGICAL INTERVENTIONS AND PHYSICAL TRAINING ARE POTENTIAL TREATMENTS BUT THERE IS INSUFFICIENT EVIDENCE TO RECOMMEND ANY SPECIFIC INTERVENTION (WU ET AL, 2015).

ANXIETY


DEPRESSION

• DRUG TREATMENTS ALONE (HACKETT ET AL, 2008B, MEAD ET AL, 2012) OR IN COMBINATION WITH PSYCHOLOGICAL INTERVENTIONS (MITCHELL ET AL, 2009) MAY BE HELPFUL. (ALL REVIEWS MENTION ADVERSE EFFECTS IN SOME INDIVIDUALS)
SIMPLE SEROTONIN THEORY UNDERPINNING SSRI ACTION IS NOT CONSISTENT WITH NEW RESEARCH (ANDREWS ET AL, 2015)

• SOME FORMS OF DEPRESSION ARE ASSOCIATED WITH INCREASED SEROTONIN LEVELS

• SSRI THERAPEUTIC LAG IS NOT PREDICTED.
DRUG TREATMENTS: LESSONS FROM MENTAL HEALTH

PUBLICATION BIAS HAS RESULTED IN SUPPRESSION OF NEGATIVE TRAILS OF SSRI’S

(Thanks to Steve Hollon, 2017; Vanderbilt University)
Antidepressants highly effective with the most severe depressions but show minimal benefit relative to placebo in mild and moderate cases.

Thanks to Steve Hollon, 2017: Vanderbilt University

HRSD = Hamilton Rating Scale for Depression
Anti-depressant medications are associated with higher relapse rates than placebo.

Psychological treatments alone have lower risk of relapse than when combined with imipramine.

**Elevated Relapse Rates: Rebound Effect**

After discontinuation, all ADMs have at least twice the risk of relapse of placebo.

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**Posttreatment Relapse Rate**

Barlow et al. 2000

Based on Clinical Global Improvement Scale (CGI) for intent-to-follow patients.

Thanks to Steve Hollon, 2017: Vanderbilt University
PSYCHOLOGICAL TREATMENTS AFTER STROKE: WHERE ARE WE AFTER THREE DECADES OF RESEARCH?

PSYCHOLOGICAL TREATMENT WITH EVIDENCE (ISWP GUIDELINES, 2016)

- MOTIVATIONAL INTERVIEWING (MI), PREVENTION OF DEPRESSION
- PROBLEM-SOLVING THERAPY, PREVENTION OF DEPRESSION
- RELAXATION, (TWO SMALL STUDIES, TENTATIVE), ANXIETY TREATMENT
- BEHAVIOURAL THERAPY, TREATMENT OF DEPRESSION IN APHASIA

(BUT EVIDENCE IS TENUOUS COMPARED WITH MENTAL HEALTH)
Lack of robust evidence for (condition-specific) psychological treatments after two decades and much research.

**SYSTEMATIC REVIEWS HAVE CONCLUDED LIMITED EVIDENCE FOR THE EFFICACY OF PSYCHOSOCIAL THERAPIES**

- CAMPBELL-BURTON ET AL, 2011: 2 TRIALS, 175 PARTICIPANTS
- LOETSCHER T & LINCOLN NB, 2013; 6 TRIALS, 223 PARTICIPANTS
- HACKETT, ANDERSON, HOUSE, & HALTEH, 2008A: 14 TRIALS, 1515 PARTICIPANTS
- HACKETT, ANDERSON, HOUSE, & XIA, 2008B: 16 TRIALS, 1655 PARTICIPANTS
- SUGAVANAM, MEAD, BULLEY, DONAGHY, & VAN WIJCK, 2013; 17 TRIALS, 614 PARTICIPANTS (SURVIVORS)
- GILLESPIE ET AL, 2014: 44 TRAILS, >1500 PARTICIPANTS
- KNAPP ET AL, 2017: 3 STUDIES, 196 PARTICIPANTS
- CHUNG ET AL. 2013: 19 STUDIES, 907 PARTICIPANTS

**TOTAL = 121 TRIALS : 6,785 PARTICIPANTS**
CONCLUSIONS OF SYSTEMATIC REVIEWS

• HACKETT ET AL 2008A: A SMALL BUT SIGNIFICANT EFFECT OF PSYCHOTHERAPY ON IMPROVING MOOD AND PREVENTING DEPRESSION WAS IDENTIFIED. MORE EVIDENCE IS REQUIRED BEFORE RECOMMENDATIONS CAN BE MADE ABOUT THE ROUTINE USE OF SUCH TREATMENTS AFTER STROKE.

• KNAPP ET AL 2017: EVIDENCE IS INSUFFICIENT TO GUIDE THE TREATMENT OF ANXIETY AFTER STROKE. FURTHER WELL-CONDUCTED RANDOMISED CONTROLLED TRIALS (USING PLACEBO OR ATTENTION CONTROLS) ARE REQUIRED…. 

• WU ET AL 2015: THERE WAS INSUFFICIENT EVIDENCE ON THE EFFICACY OF ANY INTERVENTION TO TREAT OR PREVENT FATIGUE AFTER STROKE.

• CHUNG ET AL. 2013 WE IDENTIFIED INSUFFICIENT HIGH-QUALITY EVIDENCE TO REACH ANY GENERALISED CONCLUSIONS ABOUT THE EFFECT OF COGNITIVE REHABILITATION ON EXECUTIVE FUNCTION,.. 

• CAMPBELL BURTON ET AL 2011: THERE IS INSUFFICIENT EVIDENCE TO GUIDE THE TREATMENT OF ANXIETY AFTER STROKE.
LACK OF CONCLUSIVE EVIDENCE FOR PSYCHOLOGICAL TREATMENTS AFTER TWO DECADES

• SUGAVANAM, ET AL 2013; DUE TO THE HETEROGENEITY AND QUALITY OF INCLUDED STUDIES, NO FIRM CONCLUSIONS COULD BE MADE ON THE EFFECTIVENESS, FEASIBILITY AND ACCEPTABILITY OF GOAL SETTING IN STROKE REHABILITATION.

• LOETSCHER T & LINCOLN NB, 2013; THE EFFECTIVENESS OF COGNITIVE REHABILITATION REMAINS UNCONFIRMED. THE RESULTS SUGGEST THERE MAY BE A SHORT-TERM EFFECT ON ATTENTIONAL ABILITIES, BUT FUTURE STUDIES NEED TO ASSESS THE PERSISTING EFFECTS

GILLESPIE ET AL 2016: DESPITE RESEARCH INVOLVING OVER 1500 PATIENTS IN 44 RANDOMIZED STUDIES, THERE IS VERY LITTLE STRONG EVIDENCE FOR THE EFFECTIVENESS OF REHABILITATION FOR COGNITIVE DEFICITS FOUND AFTER STROKE, AND VERY FEW DIRECT CLINICAL RECOMMENDATIONS CAN BE MADE.
RESEARCH INTO PSYCHOLOGICAL INTERVENTIONS AFTER STROKE
TREATMENT: NOT QUITE THERE YET!
IS OUR FOCUS ON CONDITION-SPECIFIC TREATMENTS RIGHT?

OR SHOULD WE FOCUS ON TRANSDIAGNOSTIC TREATMENTS?

Let’s take a risk and think!
ARE CONDITION-SPECIFIC OR TRANSDIAGNOSTIC TREATMENTS RIGHT FOR STROKE?

• MANY STROKE SURVIVORS (40%+) HAVE MULTIPLE PSYCHOLOGICAL ISSUES. TREATING ONE CONDITION MAY SIMPLY INCREASE ATTENTION TO THE OTHERS. (SYMPTOM SUBSTITUTION).

• MANY PSYCHOLOGICAL ADJUSTMENT ISSUES ARE NOT CAPTURED BY DIAGNOSIS (E.G. PAIN, FATIGUE, LOW SELF-ESTEEM).

• CORE PROCESSES COMMON TO GROUPS OF CONDITIONS ARE GOOD TARGETS FOR TRANSDIAGNOSTIC TREATMENT. (SEE NEXT SLIDE)

• PEARL & NORTON (2017). META-ANALYSIS OF 67 STUDIES COMPARING CONDITION-SPECIFIC TO TRANSDIAGNOSTIC. TRANSDIAGNOSTIC THERAPIES WERE STATISTICALLY SUPERIOR.

• EVEN IF EFFICACIOUS, DELIVERING AN ARMOURY OF CONDITION-SPECIFIC THERAPIES MAY BE IMPRACTICAL IN THE STROKE CONTEXT.
### Transdiagnostic Psychological Treatments

<table>
<thead>
<tr>
<th>Core Process</th>
<th>Psychological Condition</th>
<th>Associated Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intolerance of uncertainty (Dugas et al. 2004)</td>
<td>anxiety in all its forms</td>
<td>Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (Barlow et al., 2011)</td>
</tr>
<tr>
<td>Psychological flexibility (Barlow et al., 2011)</td>
<td>psychological distress in general</td>
<td>Acceptance and Commitment Therapy (Hayes, et al 2006)</td>
</tr>
</tbody>
</table>
IS OUR OBSESSION WITH THE RCT THE RIGHT TREATMENT EVALUATION APPROACH FOR PSYCHOLOGICAL INTERVENTIONS?

Let's take another risk and think!
CLINICAL TRIALS (RCTS) AND PSYCHOLOGICAL TREATMENTS ARE A DIFFICULT MATCH

• 1) TAKES DECADES TO COMPLETE THE DEVELOPMENT AND EVALUATION OF A PSYCHOLOGICAL TREATMENT BY RCT. BUT EFFICACY OF PSYCHOLOGICAL TREATMENTS HAS LIMITED LIFE.
  • (THIS IS NOT UNIQUE TO PSYCHOLOGY C.F. IMMUNISATION AND ANTIBIOTIC TREATMENTS).

• 2) PSYCHOLOGICAL INTERVENTIONS, LIKE SURGERY, DON’T LEND THEMSELVES EASILY TO EVALUATION BY RCT.
  • VARIABILITY TO SUIT INDIVIDUAL NEEDS IS A FEATURE OF PSYCHOLOGICAL TREATMENTS.
  • GRADUAL EVOLUTION OF PSYCHOTHERAPIES IS NOT CAPTURED BY RCTS.
  • TECHNICAL NATURE OF TRAILS LEADS TO THE TRIALIST---PRACTICE GAP.
  • BLINDING DURING TREATMENT DELIVERY IS NOT POSSIBLE.
  • BLINDING DURING ASSESSMENT IS OFTEN COMPROMISED.
  • COST-EFFECTIVE GROUP AND SELF-MANAGEMENT TREATMENTS ENTAIL MAJOR STATISTICAL AND DESIGN CHALLENGES.
ALTERNATIVE QUASI-EXPERIMENTAL APPROACHES TO THE RCT EXIST, BUT ARE LITTLE USED IN PSYCHOLOGICAL STROKE RESEARCH AND WHEN THEY ARE USED THEY ARE BASED ON FEW CASES.

(MUCH MORE USED IN PHYSIO- AND OCCUPATIONAL THERAPY RESEARCH)

PRACTICE-DERIVED EVIDENCE

• INVOLVES CLINICIANS IN DATA COLLECTION (SEEMS TO HAVE DECLINED IN RECENT YEARS)

• SELECTS CASES FOR TREATMENT ACCORDING TO CLEAR INCLUSION AND EXCLUSION CRITERIA

• AT THE VERY LEAST RECORDS PRE- AND POST-TREATMENT SCORES.
  • NOT A BAD INDEX OF EFFICACY IN THE ABSENCE OF UNDERLYING TRENDS. (E.G. TRAUMA DEBRIEF!)

• BUILDS CASES INTO CASE SERIES

• IDEALLY USES SINGLE-CASE, SMALL-N AND QUASI-EXPERIMENTAL DESIGNS TO PROVIDE ROBUST EVIDENCE OF EFFICACY QUICKLY.

Forthcoming
SINGLE CASE EXPERIMENTAL DESIGNS: REPEATED MEASURES WITH PHASE SHIFTS

FIGURE 1

Hypothetical data demonstrating unambiguous changes in level (Panel A), trend (Panel B), and variability (Panel C).
FIGURE 5.
CONTACT DETAILS

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