4 Evaluating efficacy and areas of clinical application for LI interventions

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What do you remember from our practical lecture last week?

What problems might come up in BA?

Problems that can come up in BA

- Forgetting to do the activities

- Lack of motivation/energy

- Lack of time for activities

- Exhaustion/overwhelm

- Can't focus or enjoy the activity - stuck in negative thoughts

- Reducing bad activities vs increasing good activities

- Big practical / necessary problems in life

Possible solutions

- Be kind, empathetic, validating

- What happened/what activity did you do *instead*?

- Differentiate short-term and long-term consequences

- What got in the way?

- How could we make the activity easier? Or start with a different, easier activity?

- Action First / 5min rule -> **it will get easier with time**

More possible solutions

- Praise every small achievement, fight against all-or-nothing/ black and white thinking (-> more advanced therapy)

- Always try to map out barriers and come up with plan B/C/D ahead of the week

- Evaluate schedule to find more time / stick with small goals

- Psycho-education on boom and bust

- Psycho-education about rumination, problem-solving, mindfulness/distraction techniques
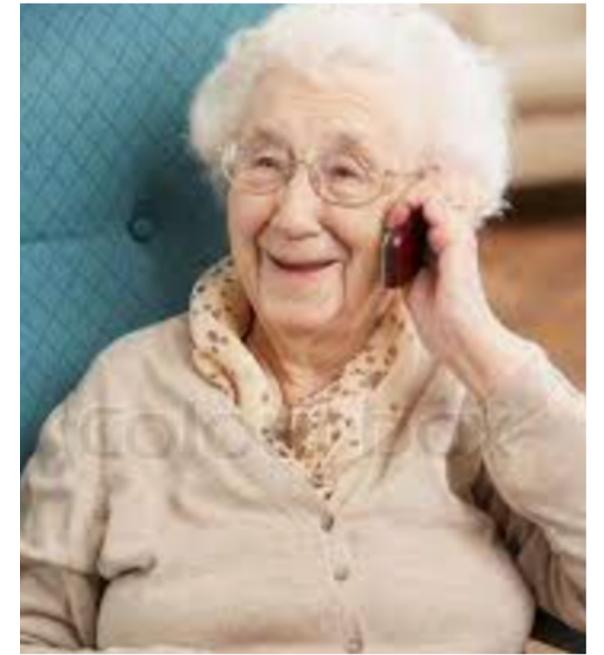
Explaining LI interventions in simple terms

Evaluating the efficacy of BA and other LI interventions

- What are the best ways to evaluate the efficacy of psychological treatment?

Evaluating the efficacy of BA and other LI interventions

- What are the best ways to evaluate the efficacy of psychological treatment?

- Why are randomised controlled trials **randomised**?

- Through randomisation, we are hoping to distribute any potentially confounding variables equally between both groups

- However, we should still check whether that succeeded (as much as we can)

All demographic, clinical and COVID-related baseline characteristics

Diagnostic categories were assessed using the Structured Clinical Interview for DSM-5. MDE = major depressive episodes, PDD = persistent depressive disorder, GAD = generalised anxiety disorder

Variable (mean, SD)	BA group (n = 34)	Control group (n = 34)
Age	32.38 (10.92)	30.79 (11.27)
Years in full time education	16.29 (3.23)	15.88 (2.29)
Race	76.5% white, 23.5% non-white	96.9% white, 3.1% non-white
Highest education level attained	26.5% A-level/GCSE 38.2% Undergraduate or professional qualification 35.3% Postgraduate	23.5% A-level/GCSE 50% Undergraduate or professional qualification 26.5% Postgraduate
Current antidepressant treatment	14.7%	23.5%
Current MDE	48.5%	41.2%
Current PDD	6.1%	5.9%
Current GAD	6.1%	8.8%
Current panic disorder	6.1%	2.9%
Current social anxiety disorder	0%	2.9%
Baseline work status	25.7% full time 25.7% part time 48.6% unable to work	37% full time 20% part time 43% unable to work
Percentage critical key workers as defined by the UK government[1]	14% yes 86% no	17% yes 83% no

Baseline isolation status	44.1% only essentials 41.2% social distancing 8.8% normal 5.9% shielding with access to outside space 0% shielding with no access to outside space	41.2% only essentials 52.9% social distancing 2.9% normal 0% shielding with access to outside space 2.9% shielding with no access to outside space

Outdoor access	88.2% yes 11.8 % no	85.3% yes 14.7% no
Baseline time spent exercising per week (self-report)	51% less than 30min 49 % more than 30min	77% less than 30min 23% more than 30min
Baseline time spent outside per week (self-report)	80% less than 2h 20% more than 2h	77% less than 2h 23% more than 2h
Baseline COVID-19 risk	100% no	94% no 6% yes
Baseline COVID-19 risk in the family	77% no 23% yes	80% no 20% yes
Baseline COVID-19 symptoms	100% no	97% no 3% yes
Baseline COVID-19 diagnosis	97% no 3% suspected	80% no 20% suspected
Baseline COVID-related stress (score out of 72)	32.40 (6.44)	31.57 (7.86)
Baseline COVID-related anxiety (score out of 45)	32.31 (4.36)	30.63 (4.66)
Baseline COVID-related lifestyle disruption (score out of 24)	17.40 (3.35)	16.91 (3.82)

Baseline COVID-19 symptoms	100% no	97% no 3% yes
Baseline COVID-19 diagnosis	97% no 3% suspected	80% no 20% suspected

• By conducting an experiment, we can manipulate the temporal order of events (e.g. does an early increase in activation lead to a later decrease in depression, rather than the other way around?)

• Randomisation should prevent any third (confounding) variable from explaining the association

Number of people who drowned by falling into a pool
correlates with
Films Nicolas Cage appeared in

Correlation: 66.6% (r=0.666004)

Swimming pool drownings

Nicholas Cage

| 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |

140 drownings — 6 films
120 drownings — 4 films
100 drownings — 2 films
80 drownings — 0 films

● Nicholas Cage   ＋ Swimming pool drownings
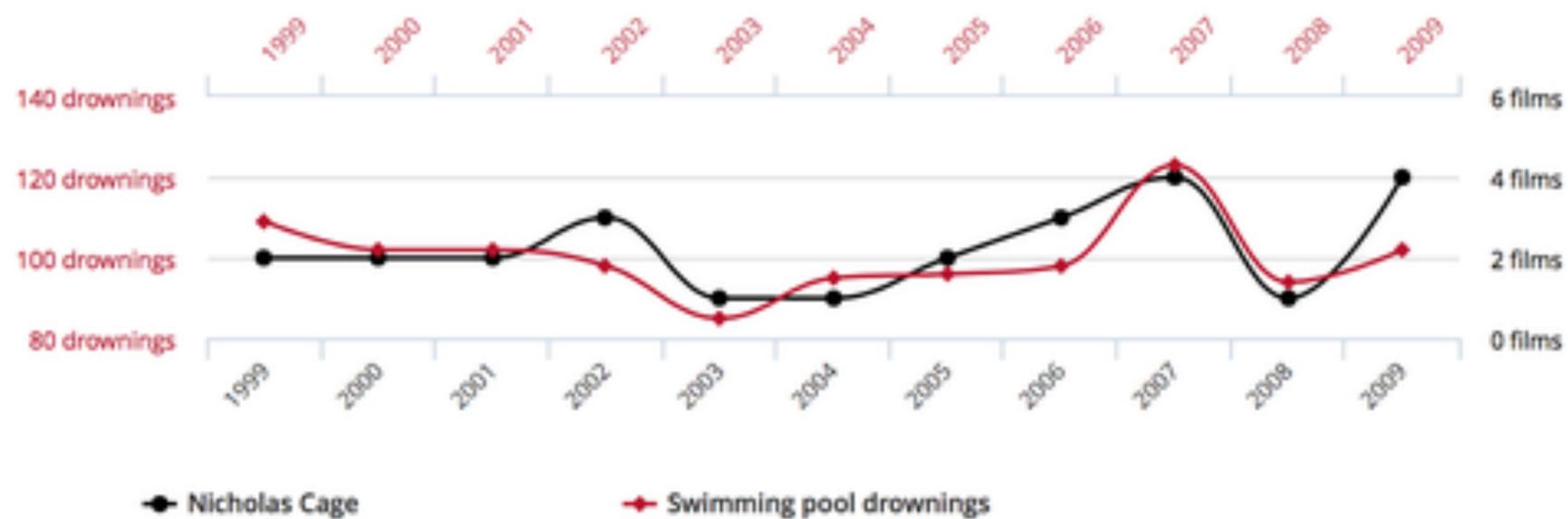
tylervigen.com

Data sources: Centers for Disease Control & Prevention and Internet Movie Database

Evaluating the efficacy of BA and other LI interventions

- What are the best ways to evaluate the efficacy of psychological treatment?

- Why are randomised controlled trials randomised?

- Why are randomised controlled trials **controlled**?

• A (passive) control group allows us to compare our intervention to rates of **spontaneous recovery with time** and **regression to the mean**

• Crucially, it allows us to check if we're not making patients worse than they would be without it!

• An active control group additionally allows us to compare our intervention to **placebo effects**, although this is harder to do with psychological interventions
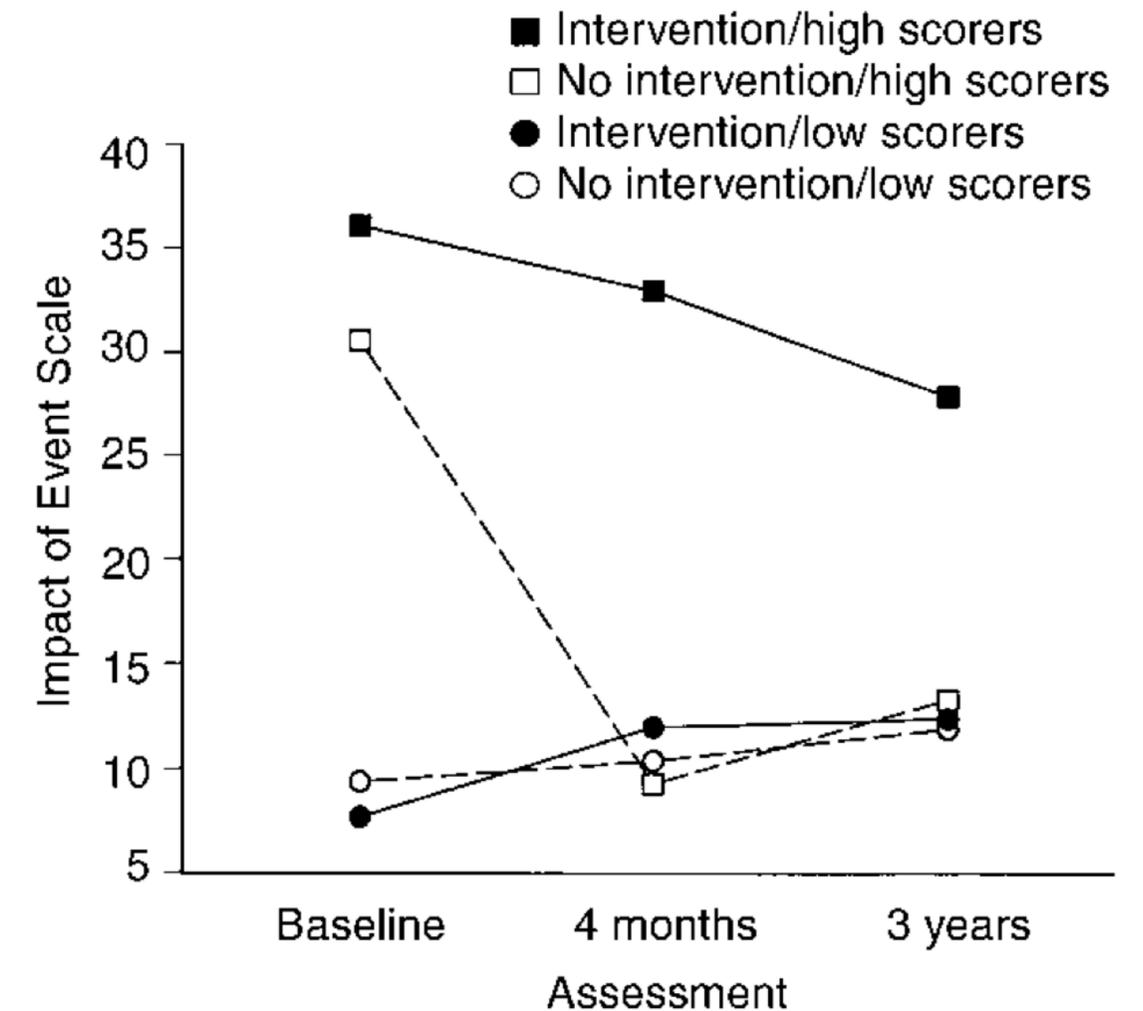
Mayou, Ehlers and Hobbs (2000)

Psychological debriefing used to be a popular intervention after trauma until it was found it significantly slowed down recovery when compared to a passive control group!

Efficacy of LI interventions for depression

Ekers et al. (2014)

- 26 randomised controlled trials (over 1500 participants)

- BA more effective than control groups or antidepressant medication

- More studies with long term follow-up needed

Study name

Hedges's g and 95% CI

Wilson 1983
Fuchs 1977
Maldonado Lopez 1982
Gawrysiak 2009
Taylor 1977
Comas-Diaz 1981
Cullen 2006
Ekers 2011
Rehm (SM) 1981
Mitchell 2009
Thompson 1987
Carlbring 2013
Rokke 1999
Shaw 1977
Thompson and Gallagher 1984
Skinner 1984
Mclean 1979
O'Mahen 2013
Gallagher-Thompson 2000
van den Hout
Wilson 1982 Pla vs Rlx
Rehm (SC) 1981
Lovett 1988
Armento 2012
Rehm (SM/SE) 1981
Rehm (SM/SR) 1981
Wilson 1982 Pla vs min con
Dimidjian 2006
Wilson 1982 Ami vs min con
Kanter 2013
Wilson 1982 & Ami vs rlx

-4.00   -2.00   0.00   2.00   4.00
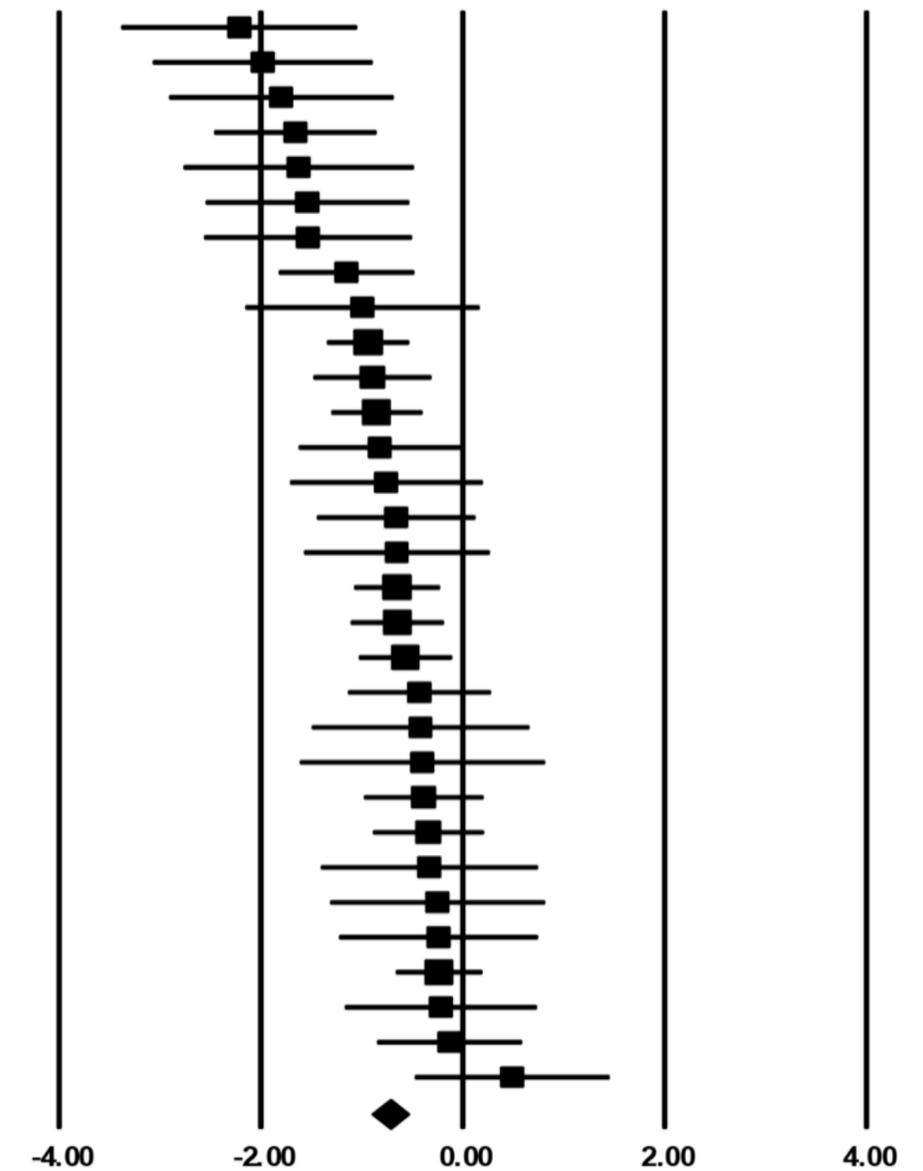
Favours BA   Favours Control

Cuijpers et al. (2007) MA

- Large effect size when comparing BA and control conditions

- No significant difference from other established treatments for depression

Mazzuchelli et al. (2009) MA

- Again, large effect sizes found in comparison to control conditions

- No significant difference from other established treatments

"BA may be considered a well-established and advantageous alternative to other treatments of depression."

Orgeta et al. (2017)

- SR and MA of 18 randomised controlled trials

- BA effective for reducing depression symptoms for **older people in the community** (55 and older)

- Larger studies needed

Tindall et al. (2017)

- SR and MA of 3 randomised controlled trials and 7 pre-post studies

- Examining BA for **younger people** (18 and below)

- BA may be effective, but more studies with better methodology are needed

Zabihi et al. (2020)

- SR & MA of BA for depression in **informal caregivers**

- 12 randomised controlled trials

- BA reduces depression symptoms after intervention and at 1-year follow-up

Mir et al. (2015)

- Qualitative study on BA adapted for **muslim communities**

- Incorporating religious beliefs into the intervention narrative

- Interviews showed the intervention as acceptable and feasible

Moradveisi et al. (2013)

- Comparing BA vs antidepressant medication in **routine clinical practice in Iran**

- More effective and better retention than antidepressant medication

- More effective in patients with more severe depression

Bryant et al. (2017)

- Randomised controlled trial of brief BA for **women with a history of gender-based violence in Kenya**

- Provided by lay workers from the community after 8 days of training

- Moderate reductions in psychological distress maintained at 3-month follow-up

global mental health

The potential of low-intensity and online interventions for depression in low- and middle-income countries

C. L. H. Bockting[1]*, A. D. Williams[1], K. Carswell[2] and A. E. Grech[3]

WORLD Psychiatry
OFFICIAL JOURNAL OF THE WORLD PSYCHIATRIC ASSOCIATION (WPA)

Scaling up psychological treatments for common mental disorders: a call to action

Daisy R. Singla,[1,2] Giuseppe Raviola,[3,4] and Vikram Patel[3,5]

Efficacy of LI interventions during crisis periods

Ruzickova et al. (2021)

- 4-week online BA administered by non-specialists after 15h of training

- BA remains effective **even when activity options are significantly limited** due to social distancing

- Significant reduction in depression + anhedonia and increase in activation + social support

- Benefits remained at one-month follow-up

- BA may be particularly appropriate for **societal crisis periods** with increased mental health burden

Low in mood and activity during covid-19?

Sign up to our online ActivStudy!

Depression

Behavioural activation

Anhedonia

State anxiety

Misclassifications of negative faces as positive or neutral
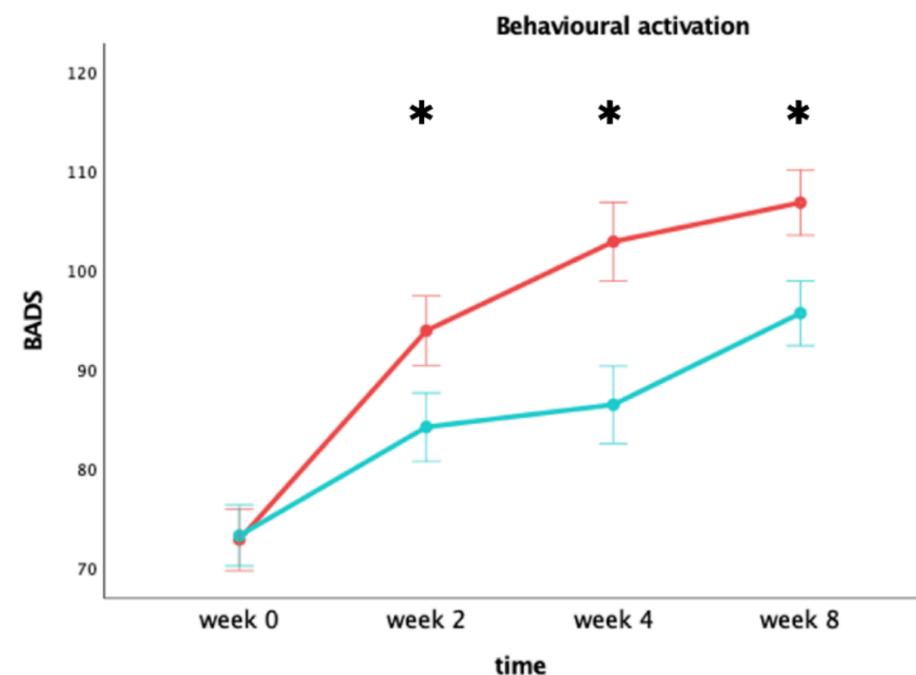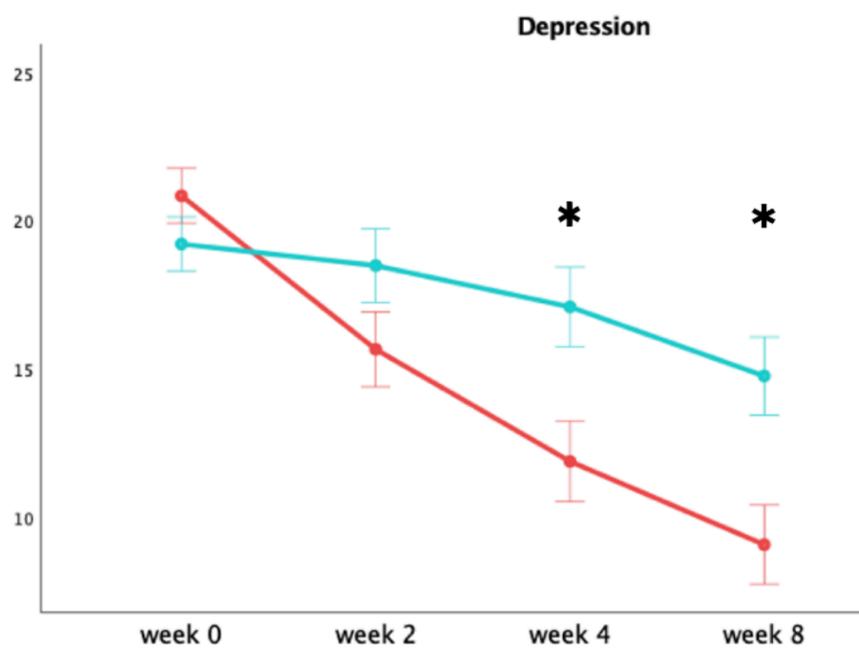
group allocation
— BA
— Control
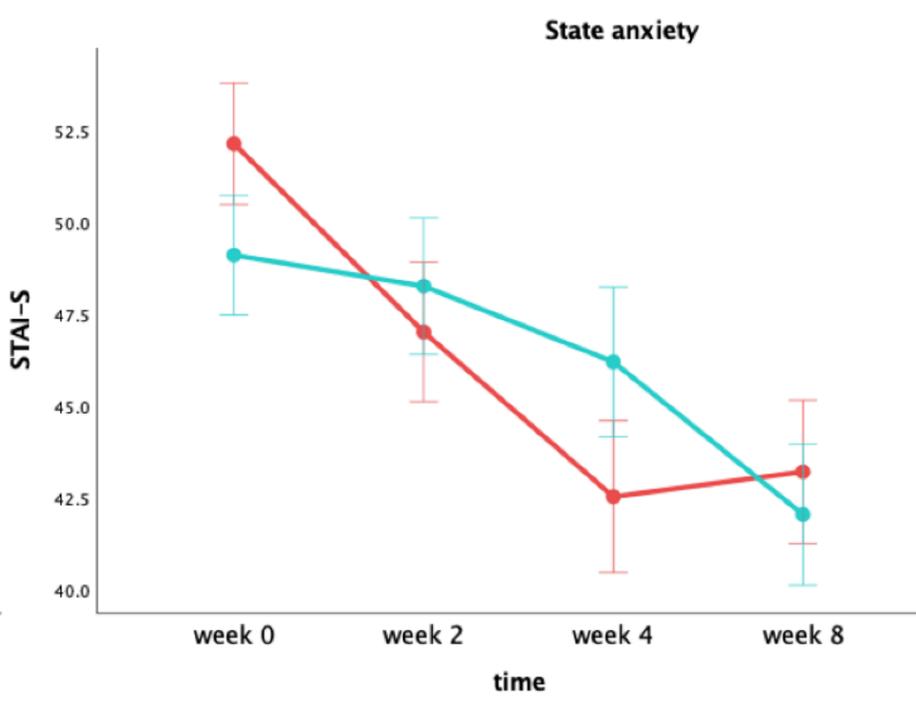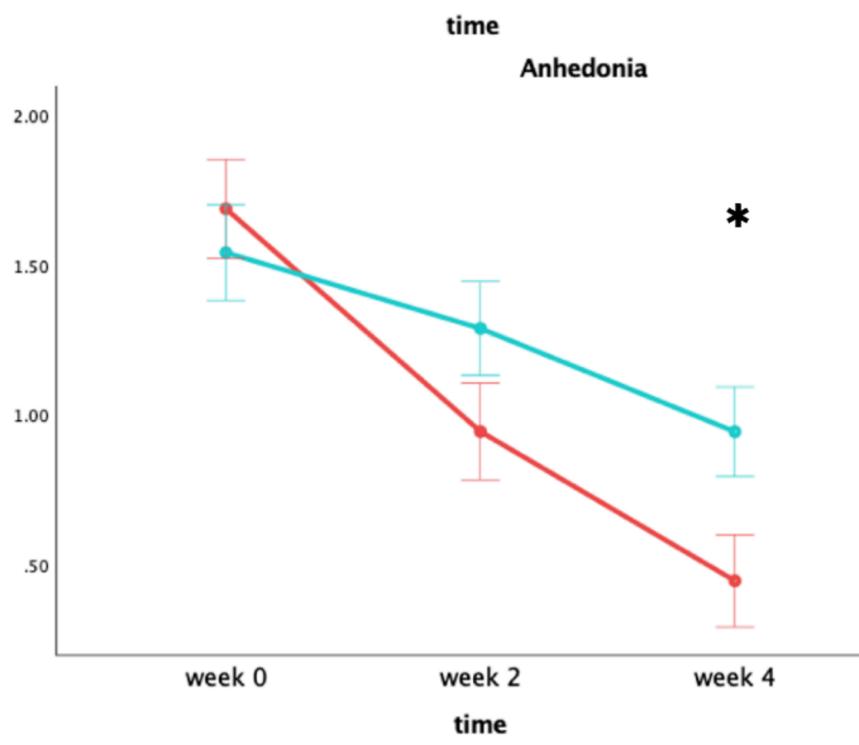
group
— BA
— Control

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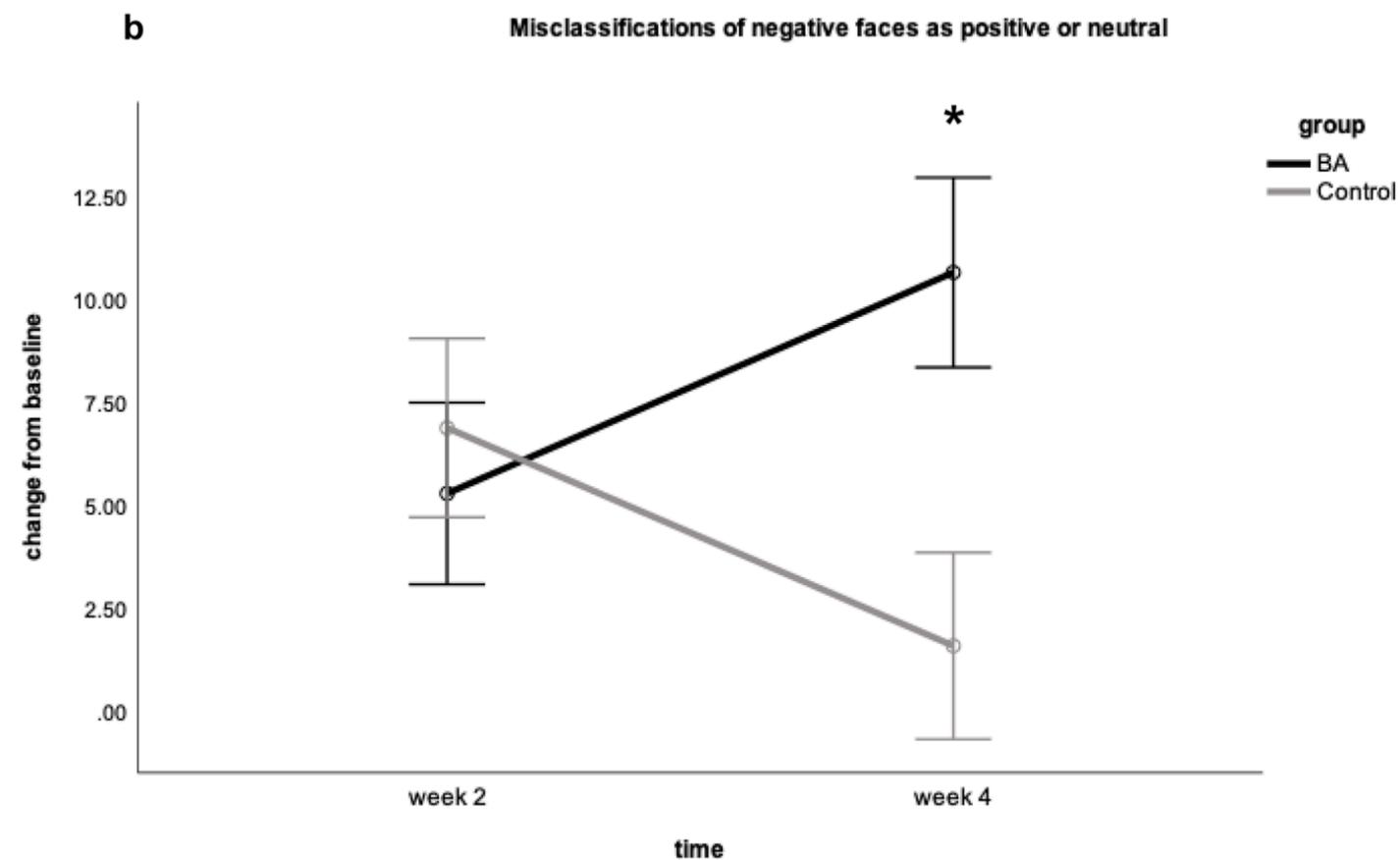
Efficacy of LI interventions for anxiety

Chen et al. (2013)

- 8 weeks of group BA vs passive control for **excessive worry** (transdiagnostic treatment)

- daily activity monitoring, identifying avoidant behaviours, goal setting

- significant (but small) effects on excessive worry, intolerance of uncertainty, cognitive avoidance, problem solving

- however, no significant effects on anxiety or stress symptom scores

- possible similarity between BA and exposure treatments in anxiety?

- other strategies probably needed for a larger effect - e.g. active problem-solving training, examining core beliefs, "worry time", relaxation
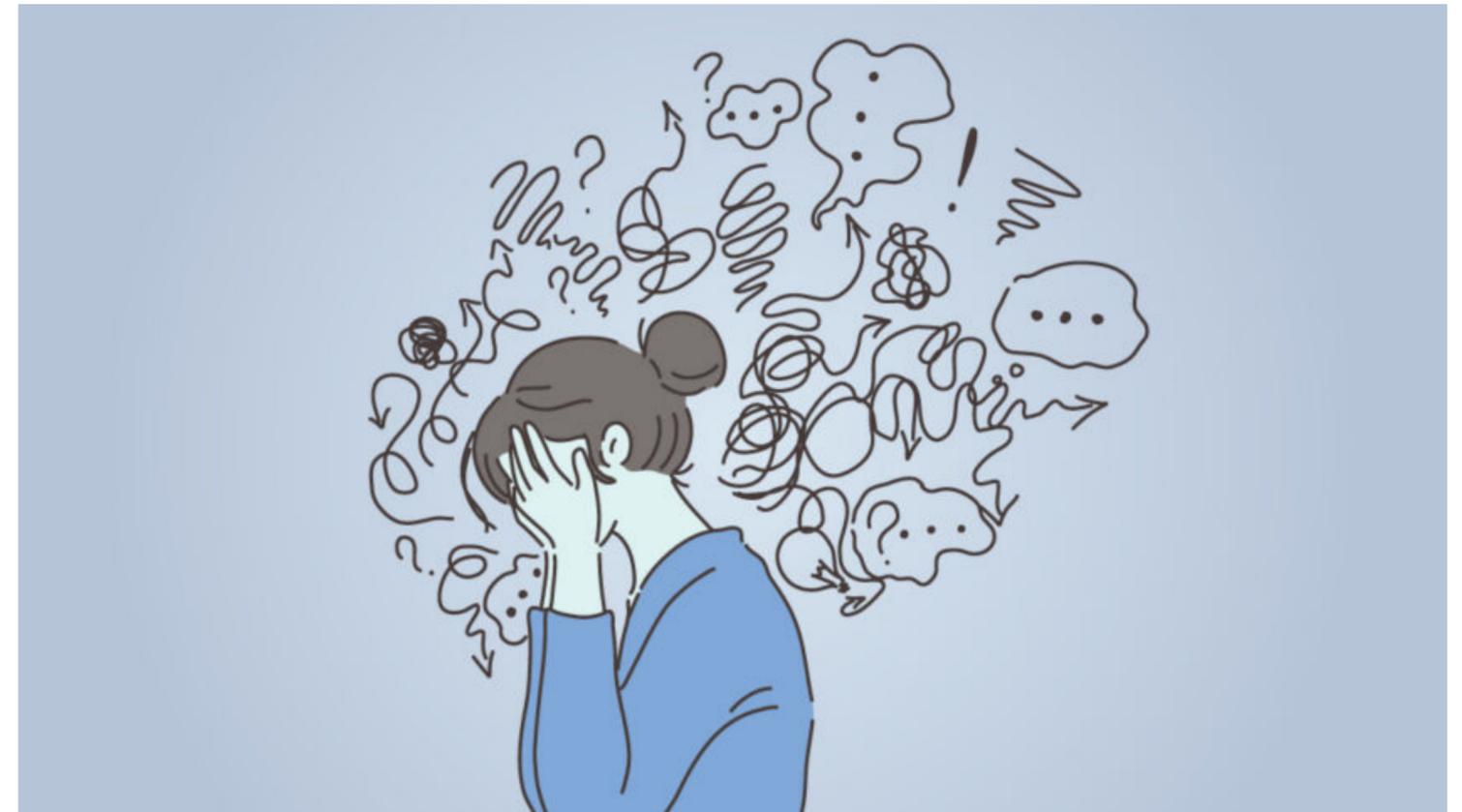
What keeps generalized anxiety disorder (GAD) going?

Intolerance of uncertainty

Certainty-seeking strategies:
Planning in advance
Checking
Avoiding & procrastinating
Seeking reassurance

Unintended outcome: Strategies to 'feel certain' such as worrying can backfire: for every "what if …?" question there are many uncertain answers

Having positive beliefs about worry

Unintended outcome: People who hold positive beliefs about worry tend to worry more

Worrying helps me to find solutions to problems
Worring increases my motivation to get things done
Worrying in advance helps me cope if the bad event happens
Worrying can prevent bad things happening
Worrying shows I am responsible and caring

Generalized Anxiety Disorder & Worry

Unintended outcome: If you don't think that you're capable of solving problems you might try to avoid problematic situations

Unintended outcome: Avoidance strategies are tiring and can lead to more of the things that we are trying to suppress

Negative problem orientation

Cognitive avoidance

Suppress worrisome thoughts
Using distraction to interrupt worry
Avoiding situations that cause worry

PSYCHOLOGYTOOLS®

Hopko et al. (2016)

- BA found effective for anxiety symptoms in 70 breast cancer patients
- Pre-post design without a control group

Essau et al. (2014)

- BA found effective for anxiety symptoms in 60 school children
- Pre-post design without a control group

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DEPRESSION   ANXIETY

WHEN ANXIETY BECOMES INTOLERABLE, ALIVENESS SHUTS DOWN

WHEN DEPRESSION BECOMES INTOLERABLE, ALIVENESS DEMANDS RELEASE
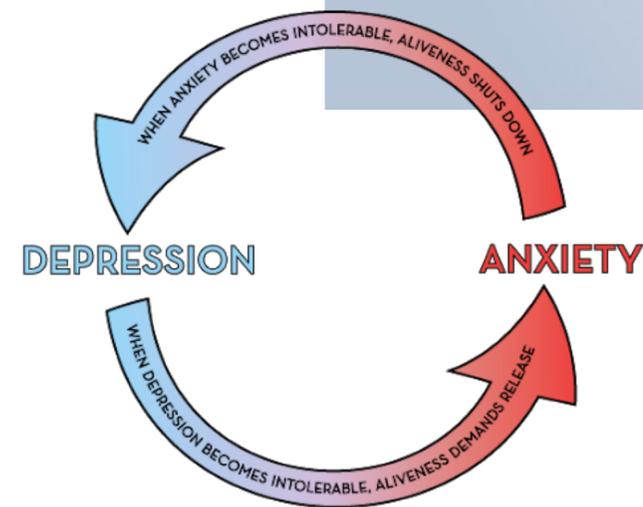
Ali et al. (2017)

- Longitudinal cohort of over **400** patients

- 50% participants found to relapse within 1 year, particularly if they had residual symptoms at the end of treatment

- Compare to relapse rates from full CBT (30%) or antidepressant medication (76%) as found by Hollon et al. (2005)

- Or mindfulness based cognitive therapy (40%) as found by Piet and Hougaard (2011)

- Recommend that patients are treated until residual symptoms are gone and follow-up care is provided

How durable is the effect of low intensity CBT for depression and anxiety? Remission and relapse in a longitudinal cohort study

"We suggest taking the long view, recognising that problems like depression often have to be managed as recurrent long-term conditions."

Remaining questions…

- Which people are most likely to benefit from LI interventions vs other treatments?

- Which people are most likely to relapse?

- What is the role of severity, comorbidity, age of onset, demographic factors..?

- Can LI interventions be effective when administered repeatedly?

- Can they be effectively combined with other treatments to reduce risk of relapse - e.g. medication or other CBT components?

A note on activation & grief-related avoidance

- **Prolonged** avoidance of painful thoughts, emotions or physical reminders is associated with worse mental and physical health outcomes in grief (see Baker et al., 2017 for review)

- Avoidance has been found to mediate the link between grief-related rumination (repetitive thinking about negative past experiences) and depression (Eisma et al., 2013)

- Rumination as Avoidance Hypothesis (Stroebe et al., 2007) - repeated analysis of the past impedes acceptance and "exposure" to present reality

- Internet-based behavioural activation may facilitate gradual exposure to loss-related stimuli as well as other enriching experiences (Eisma et al., 2015)

- But care should perhaps be taken to avoid facilitating further avoidance through purely loss-avoiding activities

**Efficacy of LI
interventions for
substance abuse**

Martinez-Vispo et al. (2018)

- SR of BA for depression comorbid with **substance use**

- 6 randomised controlled trials, 2 pre-post designs

- smoking, alcohol, opiate addiction

- BA improved substance use outcomes in 7/8 and improved depression in 6/8 studies

Focus on regularly interacting with other positively reinforcing stimuli

Efficacy of LI interventions for physical health problems

Uphoff et al. (2020)

- Cochrane systematic review of BA for depression comorbid with **non-communicable diseases** (diabetes, cancer, cardiovascular, respiratory)

- 2 randomised controlled trials

- Insufficient evidence to conclude effect (possibly due to variability in physical conditions and requirement of formal depression diagnosis)

Hedman-Lagerlof et al. (2021)

- 12 weeks of internet-based CBT with therapist guidance for **atopic dermatitis**

- randomised controlled trial

- significant reduction in itch intensity, perceived stress, sleep problems

Thank you for your attention!

Don't forget you can give anonymous feedback:
https://forms.gle/xDaPaTfGyHb4FDre7