Acceptance and Commitment Therapy: Overview and evidence

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Table of Contents

Brief overview of ACT

ACT targets six core processes that are designed to build psychological flexibility. *Psychologocial flexibility* refers to an individual's ability to connect with the present moment fully, as a conscious human being, and to change or persist in behavior that is in line with their identified values (Hayes*, et al.*, 1999).

Increasing psychological flexibility involves helping clients to disentangle themselves from the cycle of experiential avoidance and cognitive fusion, not by challenging or changing their thoughts and emotions for example, but by learning to react more mindfully to such experiences, so that they no longer seem to be barriers (Ciarrochi*, et al.*, 2006). Clients are encouraged to shift their energies away from experiential control and towards valued activity, and to consistently choose to act effectively, even in the presence of difficult private events. For a detailed and comprehensive account of ACT readers are referred to Hayes et al. (Hayes*, et al.*, 1999).

The ACT treatment model consists of six sub-processes that are organized into a 'hexaflex' (see Figure 1). The hexaflex can be divided into two main components. The first includes acceptance and mindfulness processes (acceptance, defusion, the present moment, and a transcendent sense of self), and the second reflects commitment and behavioural change processes (values, committed action, the present moment and a transcendent sense of self). The ACT practitioner targets these six processes in order to build psychological flexibility.

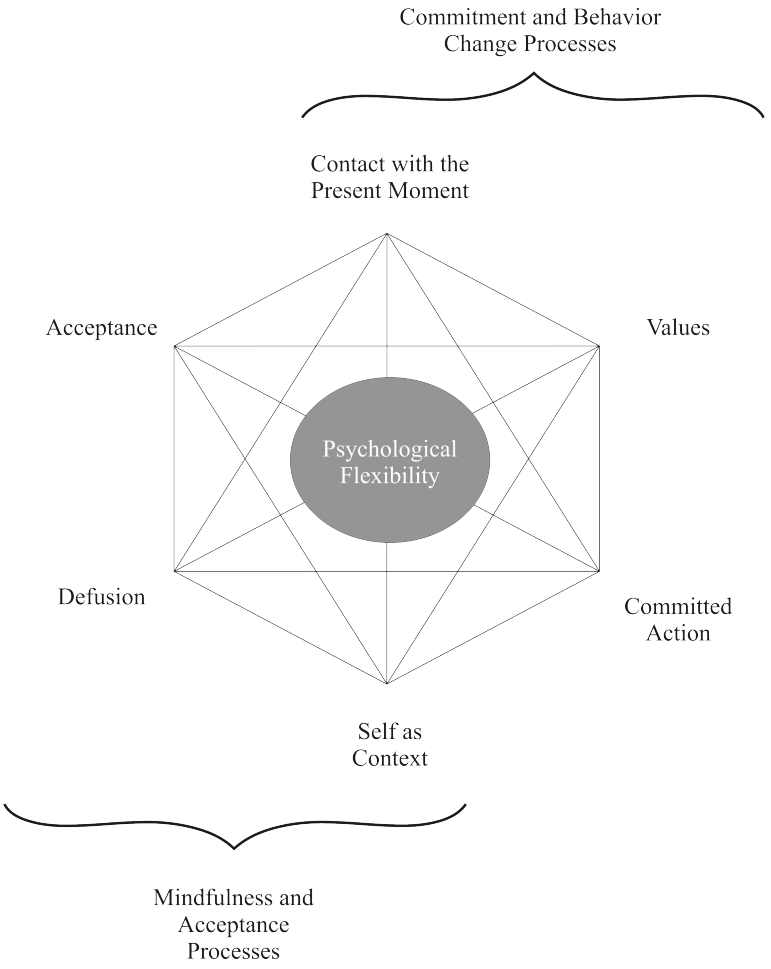


Figure 1: The six core processes targeted by ACT are expected to build psychological flexibility

The hexaflex illustrates that these processes are all connected and support each other. There is no correct order for focusing on the processes and not all individuals need to concentrate extensively on each of the processes (Strosahl*, et al.*, 2004; Hayes*, et al.*, 2005). The ultimate goal is to help people to persist in or change their behavior, depending on what the situation affords, in order to move towards what they value.

ACT clinicians use a number of exercises for each process to enhance adoption and understanding of relevant skills (for more detail see Hayes*, et al.*, 1999;

Strosahl*, et al.*, 2004). These include metaphor, paradox and experiential exercises that aim to undermine the power of experiential avoidance and cognitive fusion. A brief description of each process will now be provided.

Acceptance. The focus of this ACT process is to develop and enhance an individual's willingness to have and accept their private experiences. Treatment involves exploring the futility of emotional control and avoidance, which can often paradoxically increase an individual's level of distress and deter them from engaging in purposeful and vital, value driven behaviour. Instead, individuals are encouraged to accept their private experiences, when doing so helps them engage in valued behavior.

Defusion is a process that involves weakening the language processes that promote fusion (Hayes*, et al.*, 1999; Strosahl*, et al.*, 2004). People learn to see thoughts for what they are and not what they say they are (Hayes*, et al.*, 1999), for example, symbols of one's experience and not actual descriptive 'realities'. Defusion exercises help people to notice their language processes as they unfold and to watch the thoughts come and go, almost like a neutral observer. Defusion thus involves a radical shift in context, where thoughts are observed events, rather than literal truths that must dictate behavior.

Getting in contact with the present moment. This ACT process is often equated to mindfulness. Clients are taught to build their awareness of their private experiences and be fully open to what is happening in the present moment. In the mindful state, thoughts are expected to be experienced as what they are, events that come and go, rather than what they often seem to be, truths that bind or actual barriers. For example, a self-critical thought such as "I am useless" can be viewed as a

passing event rather than something that must control behavior. Mindfulness also connects to the values and commitment component of ACT, in that it allows the regulation of action that is informed by needs, feelings, values, and their fit with the current situation (Brown*, et al.*, 2007). According to Strosahl et al. (2004) and Hayes et al. (1999), the qualities that reflect this process are vitality, spontaneity, connection, and creativity.

Self-as-context. Clients are taught to build their awareness of their 'observing self', or self-as-context, and work on letting go of their attachment to a conceptualised self (i.e. I am boring; I am useless). The self-as-context is independent of content: It is the place where content is observed. No matter how many self-statements we generate about who we are ("I am a father:" "I am an athlete;" I am not good enough"), there is an "I" that can observe these self-statements. This 'I' is experienced as constant and stable, whilst the self-evaluations come and go (Hayes*, et al.*, 1999). From the perspective of self-as-context, people come to realize that they can let go of unhelpful self-evaluations and retain a sense of self (Pierson*, et al.*, 2004).

Values. Values refer to the directions in life that individual's choose which guide their behaviour. Thus, values are never really achieved or obtained, yet they are always present every time an individual chooses them (Hayes*, et al.*, 1999; Pierson*, et al.*, 2004). Individuals who are entangled in fusion and experiential avoidance are more likely to engage in behaviours that are inconsistent with their values. For example, even though an individual may value a relationship, they may engage in destructive social behavior, because they are afraid of intimacy. People in ACT learn to choose willingness to experience difficult thoughts and feelings, in order to engage in valued behaviour (Strosahl*, et al.*, 2004).

Committed Action. Engaging in value-directed behaviour can often produce difficult experiences such as distress, failure, and fusion. ACT helps people to see that choosing a valued direction is not a permanent thing. The choice must be made again and again, for example, after failure. ACT helps prepare people for the difficult feelings and thoughts that will show up due to their valued striving and to be more willing to "carry" those feelings and thoughts in order to do what it takes to move in a valued direction.

The "inflexahex" is another way of looking at the various processes in ACT (Bach, Moran, & Hayes, (2008). Each "positive" process in ACT has a negative counterpart, as illustrated in Figure 2.

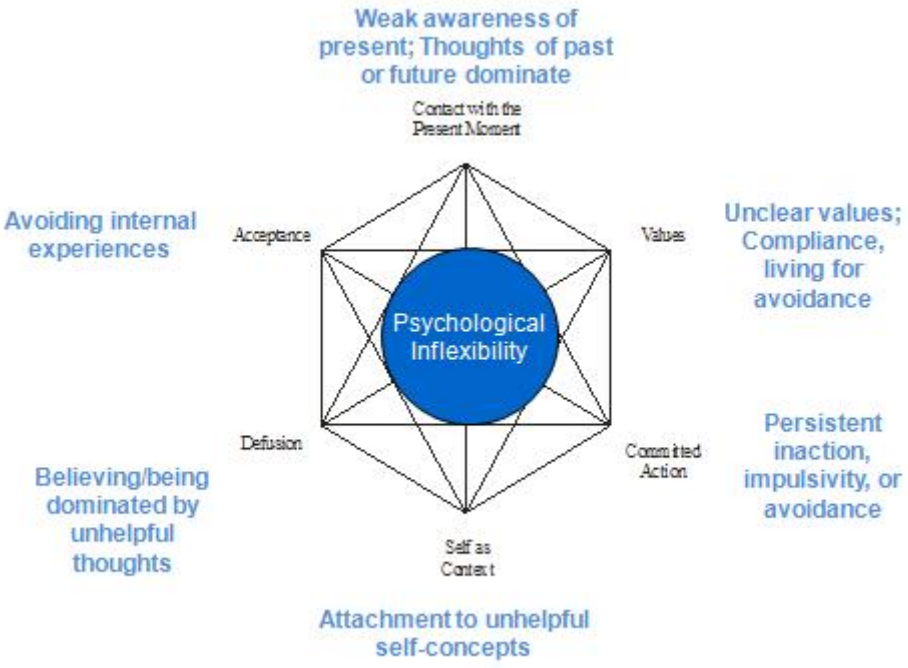


Figure 2: The inflexahex model of suffering and problematic behavior

Independent evaluations of empirical support for ACT

The American Psychological Association suggests ACT has research support for chronic pain (http://www.div12.org/PsychologicalTreatments/treatments/chronicpain_act.html) and depression (http://www.div12.org/PsychologicalTreatments/treatments/depression_acceptance.html).

The United States Substance Abuse and Mental Health Services Administration (SAMHSA) has now listed ACT as an empirically supported method as part of its National Registry of Evidence-based Programs and Practices (NREPP). It is now available on the NREPP Web site at http://174.140.153.167/ViewIntervention.aspx?id=191.

A sample of theoretical and review articles relevant to ACT
(collated by Steve Hayes)

Longmore, R. J., & Worrell, M. (2007). Do we need to challenge thoughts in cognitive behavioral therapy? *Clinical Psychology Review, 27*, 173-187.

A comprehensive review of the evidence in three keys areas that question the idea that trying to change the form of thoughts is helpful. It finds little evidence that specific cognitive interventions significantly increase the effectiveness of CBT or that cognitive change is causal in the symptomatic improvements achieved in CBT. It does not find enough evidence to conclude that there is an early rapid response to CBT (before cognitive methods). Overall, the review supports the view of the basic ACT criticism of traditional CBT.

Williams, J. C. & Lynn, S. J. (2010). Acceptance: An historical and conceptual review. *Imagination, cognition, and personality, 30,* 5-56.

Good historical review of the acceptance concept.

Hayes, S. C., Luoma, J., Bond, F., Masuda, A., and Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44,* 1-25.
[A meta-analysis of ACT processes and outcomes. Reviews all AAQ and ACT clinical studies]

Ruiz, F. J. (2010). A review of Acceptance and Commitment Therapy (ACT) empirical evidence: Correlational, experimental psychopathology, component and outcome studies. *International Journal of Psychology and Psychological Therapy, 10,* 125-162. [A meta-analysis of ACT processes and outcomes].

Hayes, S. C., Masuda, A., Bissett, R., Luoma, J. & Guerrero, L. F. (2004). DBT, FAP, and ACT: How empirically oriented are the new behavior therapy technologies? *Behavior Therapy, 35,* 35-54. [Tutorial review of the empirical evidence on ACT, DBT, and FAP]

Hayes, S. C. (2004). Acceptance and Commitment Therapy, Relational Frame Theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35,* 639-665. [Makes the case that ACT is part of a larger shift in the field.]

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Emotional avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64,* 1152-1168. [This reviews the data relevant to an ACT approach to psychopathology, as of the mid-90's. Still relevant]

Salters-Pedneault, K., Tull, M. T., & Roemer, L. (2004). The role of avoidance of

emotional material in the anxiety disorders. *Applied and Preventive Psychology, 11,* 95-114. [A more recent review of much of the experiential avoidance literature.

ACT Randomized Controlled Trials

Before publication of the 1999 book on ACT (N = 2)

1986

1. Zettle, R. D. & Hayes, S. C. (1986). Dysfunctional control by client verbal behavior: The context of reason giving. *The Analysis of Verbal Behavior, 4,* 30-38. Small (N = 18) RCT. Shows that ACT is more effective that cognitive therapy for depression when presented in an individual format, and that it works by a different process. Has several methodological holes.

1989

2. Zettle, R. D., & Rains, J. C. (1989). Group cognitive and contextual therapies in treatment of depression. *Journal of Clinical Psychology, 45,* 438-445. Small (N = 31) RCT. Shows that ACT is as effective as two variants of cognitive therapy for depression (a full package of CT vs. one without distancing) when presented in a group format, and that it works by a different process. A full intent to treat reanalysis and mediation analysis using modern statistical methods was published in Zettle, R. D., Rains, J. C., & Hayes, S. C. (2011). Do Acceptance and Commitment Therapy and Cognitive Therapy for depression work via the same process: A reanalysis of Zettle and Rains, 1989. *Behavior Modification, 35,* 265-283. The reanalysis, without the odd partial cognitive therapy group that was included for theoretical reasons of importance in the early days of ACT, shows that ACT did better than CT on the BDI at follow up and that the results were mediated by post scores on cognitive fusion but not level of depressogenic thoughts or general dysfunctional attitudes.

2000 – 2004 (N = 7)

2000

3. Bond, F. W. & Bunce, D. (2000). Mediators of change in emotion-focused and problem-focused worksite stress management interventions. *Journal of Occupational Health Psychology, 5,* 156-163. RCT (N = 90). Shows that ACT is more effective than a

previously empirically supported behavioral approach to reducing worksite stress and anxiety, and that both are better than a wait list control. Those in the ACT condition then actively modified the work environment even though that was not targeted directly in the intervention. Process analyses fit the model.

2002

4. Bach, P. & Hayes, Steven C. (2002). The use of Acceptance and Commitment Therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 70* (5), 1129-1139. RCT (N = 80) showing that a three-hour ACT intervention reduces rehospitalization by about 50% over a 4 month follow-up as compared to treatment as usual with seriously mentally ill inpatients. Process of change fit the model but would be very much unexpected outside the model. A one year follow up is being written up (still significantly different at one year)

2003

5. Zettle, R. D. (2003). Acceptance and commitment therapy (ACT) versus systematic desensitization in treatment of mathematics anxiety. *The Psychological Record, 53,* 197-215. Small (N = 24) RCT shows that ACT is as good as systematic desensitization in reducing math anxiety, but works according to a different process. Systematic desensitization reduced trait anxiety more than did ACT.

2004

6. Dahl, J., Wilson, K. G., & Nilsson, A. (2004). Acceptance and Commitment Therapy and the treatment of persons at risk for long-term disability resulting from stress and pain symptoms: A preliminary randomized trial. *Behavior Therapy, 35*, 785-802. A small (N = 19) RCT showing that a 4 hour ACT intervention reduced sick day usage by 91% over the next six months compared to treatment as usual in a group of chronic pain patients at risk for going on to permanent disability.

7. Gifford, E. V., Kohlenberg, B. S., Hayes, S. C., Antonuccio, D. O., Piasecki, M. M.., Rasmussen-Hall, M. L., & Palm, K. M. (2004). Acceptance theory-based treatment for smoking cessation: An initial trial of Acceptance and Commitment Therapy. *Behavior Therapy, 35,* 689-705. RCT (N = 76) comparing ACT to nicotine replacement therapy (NRT) as a method of smoking cessation. Quit rates were similar at post but at a one-year follow-up the two groups differed significantly. The ACT group had maintained their gains (35% quit rates) while the NRT quit rates had

fallen (<10%). Mediational analyses shows that ACT works through acceptance and response flexibility.

8. Hayes, S. C., Bissett, R., Roget, N., Padilla, M., Kohlenberg, B. S., Fisher, G., Masuda, A., Pistorello, J., Rye, A. K., Berry, K. & Niccolls, R. (2004). The impact of acceptance and commitment training and multicultural training on the stigmatizing attitudes and professional burnout of substance abuse counselors. *Behavior Therapy, 35,* 821-835. RCT (N = 93) that found that a one day ACT workshop produces greater decreases in stigmatization of clients by therapists and greater decreases in therapist burnout than an educational control and (or some comparisons) than multicultural training. Mediational analyses fit the model.

9. Hayes, S. C., Wilson, K. G., Gifford, E. V., Bissett, R., Piasecki, M., Batten, S. V., Byrd, M., & Gregg, J. (2004). A randomized controlled trial of twelve-step facilitation and acceptance and commitment therapy with polysubstance abusing methadone maintained opiate addicts. *Behavior Therapy, 35*, 667-688. A large randomized controlled trial was conducted with polysubstance abusing opiate addicted individuals maintained on methadone. Participants (n=114) were randomly assigned to stay on methadone maintenance (n=38), or to add ACT (n=42), or Intensive Twelve Step Facilitation (ITSF; n=44) components. There were no differences immediately post-treatment. At the six-month follow-up participants in the ACT condition demonstrated a greater decrease in objectively measured (through monitored urinalysis) opiate use than those in the methadone maintenance condition (ITSF did not have this effect). Both the ACT and ITSF groups had lower levels of objectively measured total drug use than did methadone maintenance alone.

2005 – 2009 (N = 19)

2006

10. Gaudiano, B.A., & Herbert, J.D. (2006). Acute treatment of inpatients with psychotic symptoms using Acceptance and Commitment Therapy. *Behaviour Research and Therapy, 44*, 415-437. RCT (N = 40) replicating the Bach and Hayes study with better measures and a better control condition. Good results esp. on measures of overt psychotic behavior (the BPRS). Mediational analyses of the effect of hallucinations fit the ACT model and are described in more detail in Gaudiano, B. A., & Herbert, J. D. (2006). Believability of hallucinations as a potential mediator of their frequency and associated distress in psychotic inpatients. *Behavioural and Cognitive Psychotherapy, 34,* 497-502. Mediational analyses of the impact of treatment on hallucination distress due to post levels of believability of hallucinations also fit the

ACT model and are described in more detail in Gaudiano, B. A., Herbert, J. D., & Hayes, S. C. (2010). Is it the symptom or the relation to it? Investigating potential mediators of change in Acceptance and Commitment Therapy for psychosis. *Behavior Therapy, 41*, 543-554.

11. Gratz, K. L. & Gunderson, J. G. (2006). Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with Borderline Personality Disorder. *Behavior Therapy, 37,* 25-35. RCT (N = 22) comparing and ACT / DBT combo to TAU. Very strong outcomes on self-harm and other measures. No follow-up.

12. Lundgren, A. T., Dahl, J., Melin, L. & Kees, B. (2006). Evaluation of Acceptance and Commitment Therapy for drug refractory epilepsy: A randomized controlled trial in South Africa. *Epilepsia, 47,* 2173-2179. RCT (N =27) with drug resistant epileptics comparing 9 hours of ACT – individual and group -- to supportive therapy. Reduction of seizures to near zero level; maintenance for a year but taken from nurses records. Quality of life improves continuously through the follow up. Mediational analyses are reported in Lundgren, T., Dahl, J., & Hayes, S. C. (2008). Evaluation of mediators of change in the treatment of epilepsy with Acceptance and Commitment Therapy. *Journal of Behavioral Medicine, 31,* 221-235. Both values and acceptance, along or in combination, work as mediators for most outcomes]

13. Woods, D. W., Wetterneck, C. T., & Flessner, C. A. (2006) A controlled evaluation of Acceptance and Commitment Therapy plus habit reversal for trichotillomania. *Behaviour Research and Therapy, 44,* 639-656.. A small randomized trial (25 completers) comparing ACT plus habit reversal to a wait list. Wait list subjects then receive ACT/HR. Solid hair pulling, anxiety, and depression outcomes, maintained at a 3 month follow up. Wait list participants also improve once they get ACT. AAQ moves and correlates well with outcomes.

2007

14. Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D. & Geller, P. A. (2007). A randomized controlled effectiveness trial of Acceptance and Commitment Therapy and Cognitive Therapy for anxiety and depression. *Behavior Modification, 31(6),* 772-799. 101 heterogeneous outpatients reporting moderate to severe levels of anxiety or depression were randomly assigned either to traditional CT or to ACT. 23 junior therapists were used. Participants receiving CT and ACT evidenced large and

equivalent improvements in depression, anxiety, functioning difficulties, quality of life, life satisfaction and clinician-rated functioning. "Observing" and "describing" one's experiences mediated outcomes for those in the CT group relative to those in the ACT group, whereas "experiential avoidance," "acting with awareness" and "acceptance" mediated outcomes for those in the ACT group.

15. Gregg, J. A., Callaghan, G. M., Hayes, S. C., & Glenn-Lawson, J. L. (2007). Improving diabetes self-management through acceptance, mindfulness, and values: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 75(2),* 336-343. RCT (N = 81) showing that ACT + patient education is significantly better than patient education alone in producing good self-management and better blood glucose levels in lower SES patients with Type II diabetes. Effects at follow up are mediated by changes in self-management and greater psychological flexibility with regard to diabetes related thoughts and feelings.

16. Lappalainen, R., Lehtonen, T., Skarp, E., Taubert, E., Ojanen, M., & Hayes, S. C. (2007). The impact of CBT and ACT models using psychology trainee therapists: A preliminary controlled effectiveness trial. *Behavior Modification, 31,* 488-511. Randomized controlled study in which 14 student therapists treat one client each from an ACT model or a traditional CBT model for 6-8 sessions following a 2 session functional analysis. Participants with any normal outpatient problem were included, mostly anxiety and depression. At post and at the 6 month follow up ACT clients are more improved on the SCL-90 and several other measures. Greater acceptance for ACT patients; great self-confidence for CBT patients. Both correlated with outcomes, but when partial correlations are calculated, only acceptance still relates to outcome.

17. Masuda, A., Hayes, S. C., Fletcher, L. B., Seignourel, P. J., Bunting, K., Herbst, S. A., Twohig, M. P., & Lillis, J. (2007). The impact of Acceptance and Commitment Therapy versus education on stigma toward people with psychological disorders. *Behaviour Research and Therapy, 45(11),* 2764-2772. An RCT (N = 96) comparing ACT and education in college students. ACT reduced mental health stigma significantly regardless of participants' pre-treatment levels of psychological flexibility, but education reduced stigma only among participants who were relatively flexible and non-avoidant to begin with.

18. Páez, M. B., Luciano, C., & Gutiérrez, O. (2007).Tratamiento psicológico para el afrontamiento del cáncer de mama. Estudio comparativo entre estrategias de aceptación y de control cognitivo. *Psicooncología, 4,* 75-95. [Psychological treatment for coping with breast cancer. A comparative study of acceptance and cognitive-control strategies]. Very small RCT (N = 12) comparing ACT and traditional CBT

protocols with women who had been diagnosed and treated for breast cancer. No differences at post but at a one year follow up ACT is significantly better in anxiety, depression, and quality of life.

19. Vowles, K. E., McNeil, D. W., Gross, R. T. McDaniel, M. L., Mouse, A., Bates, M., Gallimore, P., & McCall, C. (2007). Effects of pain acceptance and pain control strategies on physical impairment in individuals with chronic low back pain. *Behavior Therapy, 38,* 412-425. Well controlled RCT (N = 74) in with patients with chronic low back pain are assigned to very brief acceptance, pain control, or practice conditions and given physical tasks to perform. The acceptance group improved the most.

2008

20. Lundgren, T., Dahl, J., Yardi, N., & Melin, L. (2008). Acceptance and Commitment Therapy and yoga for drug-refractory epilepsy: A randomized controlled trial. *Epilepsy & Behavior, 13,* 102–108. 18 participants from India with EEG-verified epilepsy diagnosis with drug-refractory seizures were randomized to ACT or yoga (12 hours of Rx both individual and group) and followed for 1 year. ACT reduced seizures more than yoga but both improved quality of life (ACT more on the WHOQOL-BREF; yoga more on the SWLS).

21. Luoma, J. B., Hayes, S. C., Roget, N., Fisher, G., Padilla, M., Bissett, R., Kohlenberg, B. K. , Holt, C., & & Twohig, M. P. (2008). Augmenting continuing education with psychologically-focused group consultation: Effects on adoption of Group Drug Counseling. *Psychotherapy Theory, Research, Practice, Training, 44,* 463-469. Small RCT (N = 30). An ACT-based supervision group following training in Group Drug Counseling increased adoption in drug and alcohol counselors.

22. Roemer, L., Orsillo, S. M., & Salters-Pedneault, K. (2008). Efficacy of an acceptance-based behavior therapy for generalized anxiety disorder: Evaluation in a randomized controlled trial. *Journal of Consulting and Clinical Psychology, 76,* 1083-1089. Small RCT (N = 31). Good outcomes. The approach "acceptance-based behavior therapy" but the protocol relies heavily on ACT methods (w/ contemplative practice and psychoed in there as well). Mediation is not report but we've run the analyses and the AAQ mediates worry, stress, GAD severity, and anxiety (at p = .1 or better).

23. Varra, A. A., Hayes, S. C., Roget, N., & Fisher, G. (2008). A randomized control trial examining the effect of Acceptance and Commitment Training on clinician

willingness to use evidence-based pharmacotherapy. *Journal of Consulting and Clinical Psychology, 76*, 449-458. RCT (N = 59) comparing ACT to psychoeducation in preparedness to learn from a workshop on pharmacotherapy. Good outcomes (d of around .85) on willingness to refer and actual referrals for agonist and antagonist treatment, mediated by increased psychological flexibility and decreased believability of barriers to referring.

24. Wicksell, R, K., Ahlqvist, J., Bring, A., Melin, L. & Olsson, G. L. (2008). Can exposure and acceptance strategies improve functioning and quality of life in people with chronic pain and whiplash associated disorders (WAD)? A randomized controlled trial. *Cognitive Behaviour Therapy,* 37, 1-14. Small RCT (N = 21) comparing ACT to TAU with whiplash patients; significant differences in pain disability, life satisfaction, fear of movements, depression, and psychological flexibility (pain related fusion and acceptance as measured by Wicksell's Psychological Inflexibility in Pain Scale or PIPS). Improvements in the treatment group were maintained at 7-months follow-up. Mediation results reported in: Wicksell, R. K., Olsson, G. L., & Hayes, S. C. (in press). Processes of change in ACT-based behavior therapy: Psychological flexibility as a mediator of improvement in patients with chronic pain following whiplash injuries. *European Journal of Pain.* Found that follow up changes in life satisfaction and to a lesser degree pain disability were mediated by post PIPS scores.

2009

25. Lillis, J., Hayes, S. C., Bunting, K., Masuda, A. (2009). Teaching acceptance and mindfulness to improve the lives of the obese: A preliminary test of a theoretical model. *Annals of Behavioral Medicine, 37,* 58-69. RCT (N = 84) on ACT for weight self-stigma and weight maintenance. Reduced stigma, increased quality of life, and reduced weight. Effects mediated by weight related psychological flexibility.

26. Peterson, C. L. & Zettle, R. D. (2009). Treating inpatients with ocmorbid depression and alcohol use disorders: A comparisons of Acceptance and Commitment Therapy and treatment as usual. *The Psychological Record, 59,* 521-536. Small RCT (N = 24) comparing the impact of individual sessions of ACT or TAU while hospitalized. ACT produced equivalent outcomes but with about 20-25% less intervention and 1/3 less time in the hospital.

27. Tapper, K., Shaw, C., Ilsley, J., Hill, A. J., Bond, F. W., & Moore, L. (2009). Exploratory randomised controlled trial of a mindfulness-based weight loss intervention for

women. *Appetite, 52,* 396–404. RCT (N = 62) with dieting obese women randomly assigned to 4 2-hr ACT sessions or to wait list; at 6 mo. better exercise (*p* , .05), and for those applying the workshop, better weight loss as reflected by BMI differences (0.96 relative to controls, equivalent to 2.32 kg, p < 0.5).

28. Wicksell, R. K., Melin, L., Lekander, M., & Olsson, G. L. (2009). Evaluating the effectiveness of exposure and acceptance strategies to improve functioning and quality of life in longstanding pediatric pain - A randomized controlled trial. *Pain, 141,* 248-257. Small RCT (*n* = 32) comparing a brief ACT intervention (10 individual sessions) to multidisciplinary treatment plus amitriptyline (MDT) for chronic pediatric pain. Treatment continued in the MDT condition during the 3.5 and 6.5 month follow-up, which complicated comparisons at follow-up assessments due to more sessions for MDT, but results showed substantial and sustained improvements for the ACT group. When follow-up assessments were included, ACT performed significantly better than MDT on perceived functional ability in relation to pain, pain intensity and pain related discomfort (intent-to-treat analyses). At post-treatment, before the dose differences happened, significant differences in favor of the ACT condition were also seen in fear of re/injury or kinesiophobia, pain interference and in quality of life.

2010 – present (through August of 2011) – N = 20

2010

29. Flaxman, P. E. & Bond, F. W. (2010). A randomised worksite comparison of acceptance and commitment therapy and stress inoculation training. *Behaviour Research and Therapy* 43, 816-820. RCT comparing ACT, stress inoculation training, and waitlist on worksite stress (N = 107). ACT and SIT equally effective; ACT mediated by psychological flexibility, SIT not successfully mediated by cognitive change.

30. Flaxman, P. E., & Bond, F. W. (2010). Worksite stress management training: Moderated effects and clinical significance. *Journal of Occupational Health Psychology, 15,* 347-358. RCT (N = 311) of ACT vs. wait list. ACT worksite intervention found to be particularly effective for workers with above average levels of psychological distress. Following ACT, 69% of initially distressed workers improved to a clinically significant degree.

31. Fledderus, M., Bohlmeijer, E. T., Smit, F., & Westerhof, G. J. (2010). Mental health promotion as a new goal in public mental health care: A randomized controlled trial of an intervention enhancing psychological flexibility. *American Journal of Public Health, 10,* 2372-2378. RCT (N = 93) comparing ACT groups with wait list for those with mild to moderate psychological distress. Good outcomes.

32. Hinton, M. J. & Gaynor, S. T. (2010). Cognitive defusion for psychological distress, dysphoria, and low self-esteem: A randomized technique evaluation trial of vocalizing strategies. *International Journal of Behavioral Consultation and Therapy, 6,* 164-185. Small (N = 22) RCT. 3 sessions of cognitive defusion (CD) compared to a waitlist (WL) condition for university students reporting elevated distress, dysphoria, and low self-esteem. Large changes in distress, depressive symptoms, self-esteem, defused awareness of thoughts, psychological flexibility, and automatic thoughts favoring CD over WL. Maintained at 1-month follow-up.

33. Johnston, M., Foster, M., Shennan, J., Starkey, N. J., & Johnson, A. (2010). The effectiveness of an Acceptance and Commitment Therapy self-help intervention for chronic pain. *Clinical Journal of Pain, 26,* 393-402. Very small RCT (N = 14) showing that ACT bibliotherapy (Dahl & Lundgren, 2006 – see self help books above) helps with chronic pain.

34. Juarascio, A. S., Forman, E. M., & Herbert, J. D. (2010). Acceptance and Commitment Therapy versus Cognitive Therapy for the treatment of co morbid eating pathology. *Behavior Modification, 34*, 175-190. Inside a larger RCT of ACT versus CT, subanalysis (N = 55) shows that ACT produced greater reductions in eating pathology, and greater increases in global functioning.

35. Smout, M., Longo, M., Harrison, S., Minniti, R., Wickes, W., & White, J. (2010). Psychosocial treatment for methamphetamine use disorders: a preliminary randomized controlled trial of cognitive behavior therapy and acceptance and commitment therapy. *Substance Abuse, 31*(2), 98-107. RCT (N = 104) showing that ACT is no more effect than CBT in retaining or treatment methamphetamine users.

36. Twohig, M. P., Hayes, S. C., Plumb, J. C., Pruitt, L. D., Collins, A. B., Hazlett-Stevens, H. & Woidneck, M. R. (2010) A randomized clinical trial of Acceptance and Commitment Therapy vs. Progressive Relaxation Training for obsessive compulsive disorder. *Journal of Consulting and Clinical Psychology, 78,* 705-716. RCT (N = 79) of ACT for OCD vs relaxation. Good outcomes (including in depression) Mediation results

coming in a separate study (AAQ worked as mediator; processes of change even at session 5 worked but outcomes were not different until later.

2011

37. Bohlmeijer, E. T., Fledderus, M., Rokx, T. A., & Pieterse, M. E. (2011). Efficacy of an early intervention based on acceptance and commitment therapy for adults with depressive symptomatology: Evaluation in a randomized controlled trial. *Behaviour Research and Therapy, 49,* 62-67. RCT (N = 93) of ACT for adults with mild to moderate depressive symptomatology, randomly assigned to the ACT intervention (n=49) or to a waiting list (n=44). Significant reduction in depressive symptomatology (Cohen's *d*=.60) maintained at the three-month follow-up.

38. Brinkborg, H., Michanek, J., Hesser, H., & Berglund, G. (2011). Acceptance and commitment therapy for the treatment of stress among social workers: A randomized controlled trial. *Behaviour Research and Therapy, 49,* 389-398. RCT examining ACT for stress and burnout in social workers (n = 106) ACT significantly decreased stress and burnout, and increased general mental health compared to a waiting list control among the 2/3 who were stressed at baseline. Among participants with high stress, a substantial proportion (42%) reached criteria for clinically significant change.

39. Brown, L. A., Forman, E. M., Herbert, J. D., Hoffman, K. L., Yuen, E. K. and Goetter, E. M. (2011). A randomized controlled trial of acceptance-based behavior therapy and cognitive therapy for test anxiety: A pilot study. *Behavior Modification, 35,* 31-53. Very small RCT (N = 16) for test anxiety comparing ACT (with mindfulness elements) and Beck's CT. Similar outcomes on self-reports but ACT participants did objectively better on test scores in school.

40. Butryn, M. L., Forman, E., Hoffman, K., Shaw, J., & Juarascio, A. (2011). A pilot study of Acceptance and Commitment Therapy for promotion of physical activity. *Journal of Physical Activity and Health, 8,* 516-522. RCT (N = 54) comparing 4 hrs of education vs ACT for promoting physical activity. ACT participants exercised more on objective measure.

41. Fledderus, M., Bohlmeijer, E.T., Pieterse, M. E., & Schreurs, K. M. (2011) Acceptance and commitment therapy as guided self-help for psychological distress and positive

mental health: a randomized controlled trial. *Psychological Medicine, 11,* 1-11. RCT (N = 376) of an early intervention study for mild to moderate depression using ACT self-help with or without heavy email support. Reductions in depression, anxiety, fatigue, experiential avoidance and improvements in positive mental health and mindfulness; sustained at follow up.

42. Hayes, L., Boyd, C. P., & Sewell, J. (2011). Acceptance and Commitment Therapy for the treatment of adolescent depression: A pilot study in a psychiatric outpatient setting. *Mindfulness*, 2, 86-94. RCT (N = 30) of ACT for adolescent depression compared to treatment as usual. Good outcomes (about 60% showed clinically significant change in ACT; *d* = .38 at post and 1.45 at follow up).

43. Muto, T., Hayes, S. C., & Jeffcoat, T. (2011). The effectiveness of Acceptance and Commitment Therapy bibliotherapy for enhancing the psychological health of Japanese college students living abroad. *Behavior Therapy, 42,* 323–335. RCT on the impact of *Get Out of Your Mind and Into Your Life* on the mental health of international students (N = 70). Better general mental health at post and follow up. Moderately and above depressed or stressed, and severely anxious students showed improvement compared to those not receiving the book. Outcomes mediated and moderated by psychological flexibility.

44. Weineland, S., Arvidsson, D., Kakoulidis, T., & Dahl, J. (2011). Acceptance and commitment therapy for bariatric surgery patients, a pilot RCT. *Obesity Research and Clinical Practice.* RCT (N = 39) of ACT (two individual sessions plus internet) vs. TAU for patients who underwent bariatric surgery examining emotional eating, body dissatisfaction and quality of life. Good outcomes. Follow up and mediation to be reported in later study.

45. Wetherell JL, Afari N, Rutledge T, Sorrell JT, Stoddard JA, Petkus AJ, Solomon BC, Lehman DH, Liu L, Lang AJ, Hampton Atkinson J. (2011). A randomized, controlled trial of acceptance and commitment therapy and cognitive-behavioral therapy for chronic pain. *Pain, 152,* 2098-2107. RCT (N=114) comparing ACT and traditional CBT for chronic pain. Good outcomes over 6 months. No differences in outcomes. Treatment completers were more satisfied with ACT.

2012 probably

46. Pearson, A. N., Follette, V. M. & Hayes, S. C. (in press). A pilot study of Acceptance and Commitment Therapy (ACT) as a workshop intervention for body dissatisfaction and disordered eating attitudes. *Cognitive and Behavioral Practice.* RCT (N = 73) showing that ACT helps with body dissatisfaction and disordered eating attitudes.

47. Gifford , E. V., Kohlenberg, B., Hayes, S. C., Pierson, H., Piasecki, M., Antonuccio, D., & Palm, K. (in press). Does acceptance and relationship focused behavior therapy contribute to bupropion outcomes? A randomized controlled trial of FAP and ACT for smoking cessation. *Behavior Therapy.* Large RCT (N = 303) of ACT + FAP + Zyban vs Zyban for smoking cessation. Good outcomes. Mediated by psychological flexibility and working alliance but when both are included, just PF still works.

48. Westin, V. Z., Schulin, M., Hesser, H., Karlsson, M., Noe, R. Z., Olofsson, U., Stalby, M., Wisung, G. & Andersson, G. (in press). Acceptance and Commitment Therapy versus Tinnitus Retraining Therapy in the treatment of tinnitus distress: A randomized controlled trial. *Behaviour Research and Therapy.* One of the better RCTs yet done on tinnitus (N = 64). Very long follow up (18 months). ACT does better than the most widely distributed psychosocial method (Tinnitus Retraining Therapy) in reducing the interference and distress from tinnitus. Tinnitus acceptance mediated outcomes.

49. Thorsell, J., Finnes, A., Dahl, J., Lundgren, T., Gybrant, M., Gordh, T., & Buhrman, M. (in press). A comparative study of 2 manual-based self-help interventions, Acceptance and Commitment Therapy and Applied Relaxation, for persons with chronic pain. The Clinical Journal of Pain, . RFT (N = 90) of ACT versus applied relaxation using a combination of an initial face to face session, a 7 week self-help manual with weekly therapist telephone support, and a concluding face-to-face session. 6 and 12 mo follow up. Better outcomes for ACT in level of function, pain intensity, acceptance, and marginal life satisfaction. Depression and anxiety improved but no diff between conditions.

50. White, R.G., Gumley, A.I., McTaggart, J., Rattrie, L., McConville, D., Cleare, S, & Mitchell G. (in press). A feasibility study of Acceptance and Commitment Therapy for emotional dysfunction following psychosis. Behaviour Research and Therapy. Small RCT (n = 27) of 10 sessions of ACT versus TAU to help cope with anxiety and depression following psychosis. Blind raters; 3 mo f-up. Significant impact on negative symptoms, depression, crisis calls, and mindfulness. Process changes correlated with outcomes.

51. Luoma, J. B., Kohlenberg, B. S., Hayes, S. C. & Fletcher, L. (in press). Slow and steady wins the race: A randomized clinical trial of Acceptance and Commitment Therapy targeting shame in substance use disorders. Journal of Consulting and Clinical Psychology. RCT (n = 133) of 6 hr group ACT vs TAU in the treatment of shame in SUD during 28 day in patient program. At post, smaller decreases in shame in ACT; at follow up, larger decreases, more Rx involvement, and reduced substance use in ACT.

52. Rost, A. D., Wilson, K. G., Buchanan, E., Hildebrandt, M.J., & Mutch, D. (in press). Improving psychological adjustment among late-stage ovarian cancer patients: Examining the role of avoidance in treatment. Cognitive and Behavioral Practice. RCT (N = 31; 47 originally but the rest died or entered hospice care) comparing ACT and traditional CBT approaches to women coping with end-stage gynecological cancer. Nice outcomes; dominantly in favor of ACT.

53. Stotts, A.L., Green, C., Masuda, A., Grabowski, J., Wilson, K., Northrup, T., Moeller, F. G., Schmitz, J. (in press). A Stage I pilot study of Acceptance and Commitment Therapy for methadone detoxification. Drug and Alcohol Dependence. Small (N = 56) RCT study on the effect of ACT on methadone detox. 37% versus 19% successfully detoxed in ACT vs. TAU; no increased risk of opiate use

54. Morton, J., Snowdon, S., Gopold, M. & Guymer, E. (in press). Acceptance and Commitment Therapy group treatment for symptoms of Borderline Personality Disorder: A public sector pilot study. Cognitive and Behavioral Practice. Small RCT (N = 41) comparing ACT to TAU; 12 2-hr group sessions. Better outcomes for ACT on self-rated BPD symptoms, anxiety, hopelessness, psychological flexibility, emotion regulation skills, mindfulness; the last 3 mediated BPD symptoms.

55. Folke, F., Parling, T., & Melin, L. (in press). Acceptance and Commitment Therapy for depression: A preliminary randomized clinical trial for unemployed on long-term sick leave. Cognitive and Behavioral Practice. Small (N = 34) RCT of ACT (1 individual session; 5 group sessions) versus TAU for unemployed individuals on sick leave suffering from depression. Lower level of depression and higher level of quality of life and general health in ACT.

56. Bethay, S., Wilson, K. G., Schnetzer, L., Nassar, S. (in press). A Controlled Pilot Evaluation of Acceptance and Commitment Training for Intellectual Disability Staff. Mindfulness. Small (n = 34) RCT of 3 3-hour group trainings. Participants were randomly assigned to receive either 9 hours of Applied Behavior Analysis training or 9 hours of ACT plus Applied Behavior Analysis. Between group differences were observed only for participants who reported that they had been consistently applying the techniques they had learned. In addition, ACT group participants with higher levels of psychological distress at pretest showed decreased psychological distress from pretest to follow-up when compared to their control group counterparts. A concurrent decrease in the believability of burnout-related thoughts was observed in the ACT group from pretest to follow-up, relative to the control group.

57. Arch, J., Eifert, G. H., Davies, C., Vilardaga, J. P., Rose, R. D., & Craske, M. G. (in press). Randomized clinical trial of cognitive behavioral therapy (CBT) versus acceptance and commitment therapy (ACT) for mixed anxiety disorders. Journal of Consulting and Clinical Psychology. A randomized trial with mixed anxiety disorders (N = 128) comparing 12 sessions of ACT v. gold standard CBT both including behavioral exposure. Positive outcomes for both through 12 mo F-up but in blind clinical interviews (from the ADIS). ACT participants improved more in clinical severity from post to follow up than CBT (that is a very large effect: d = 1.33). Among completers their end-state clinical severity ratings were much better (d = 1.03) as well. Better improvement for ACT in psychological flexibility

(medium effect for completers: d = .59) for ACT. At follow up there was better quality of life for CBT (small effect: d = .43).

58. Biglan, A., Layton, G. L., Backen Jones, L., Hankins, M. & Rusby, J. C. (in press). The value of workshops on psychological flexibility for early childhood special education staff. Topics in Early Childhood Special Education. Small (N = 42) RCT of ACT workshops vs. wail list for early childhood special educators. At pretest, measures of experiential avoidance and mindful awareness showed significant relationships to reports of depression, stress, and burnout. The intervention reduced staff members' experiential avoidance, increased teachers' mindful awareness and valued living, and improved teachers' sense of efficacy.

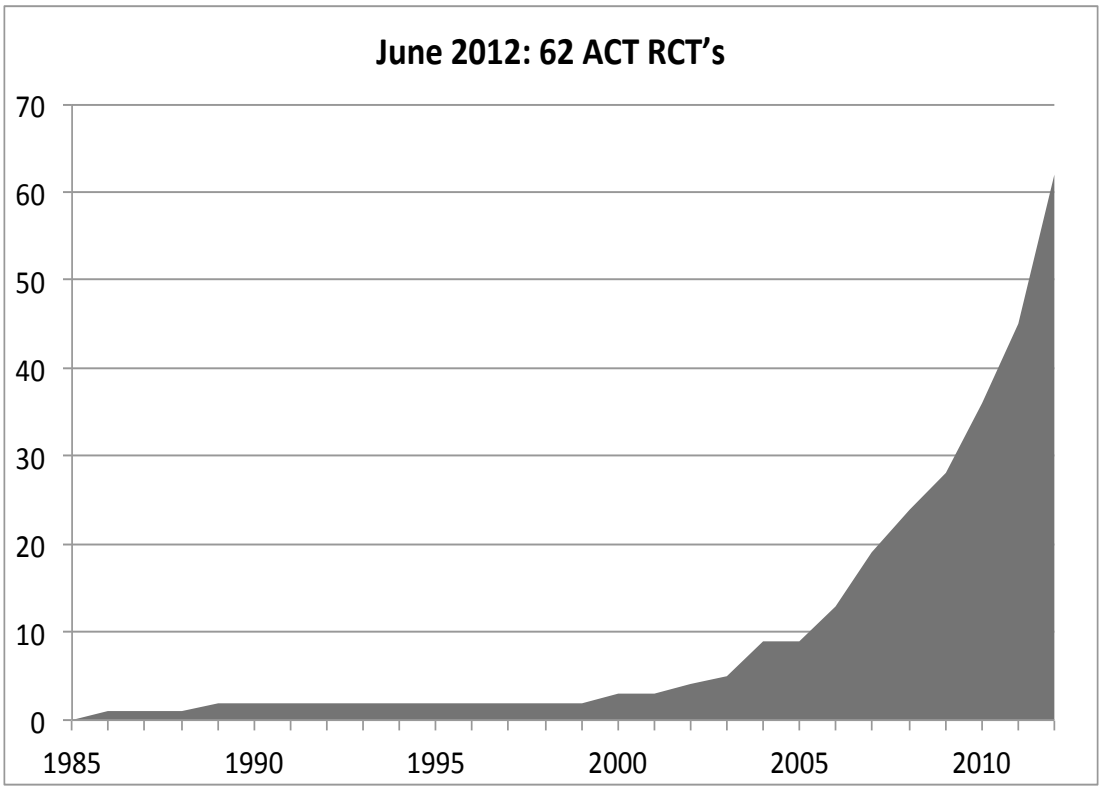
59. Jensen, K. B., Kosek, E., Wicksell, R., Kemani, M., Olsson, G., Merle, J., Kadetoff, D., & Ingvar, M. (in press). Treatment with Cognitive Behavioral Therapy increases pain-evoked activation of the prefrontal cortex in patients suffering from chronic pain. Pain. This is the very first RCT to do pre - post fMRI assessments in the psychosocial treatment of chronic pain. (N = 43; all female; all w/ Fibromyalgia). The title and paper talks about CBT and just says ACT is a form of that, but it is an ACT study. The control is a wait list. 12 weekly group sessions and 3 mo f-up. Better outcomes on depression, anxiety, and self-reported global change (activity limitation, symptoms, emotions, quality of life).

60. Jeffcoat, T. & Hayes, S. C. (in press). A Randomized Trial of ACT Bibliotherapy on the Mental Health of K-12 Teachers and Staff. Behaviour Research and Therapy. 236 primary and secondary school teachers with a waitlist control using an ACT self-help book. Participants showed significant improvement in psychological health. Significant preventive effects for depression and along with significant ameliorative effects for those in the clinical ranges of depression, anxiety and stress. Follow up general mental health, depression, and anxiety outcomes were related to the manner in which participants used the workbook and to post levels of psychological flexibility.

61. Hesser, H., Gustafsson, T., Lundén, C., Henrikson, O., Fattahi, K., Johnsson, E., Westin, V. Z., Carlbring, P., Mäki-Torkko, E., Kaldo, V., & Andersson, G. (2012, January 16). A randomized controlled trial of internet-delivered cognitive behavior therapy and acceptance and commitment therapy in the treatment of tinnitus. Journal of Consulting and Clinical Psychology. Advance online publication. doi: 10.1037/a0027021. Three arm RCT (n = 99) testing on line version of ACT and CBT vs. control (on line discussion group) for tinnitus distress. Better effects for CBT and ACT. No significant differences between ACT and CBT.

62. Mo'tamedi, H., Rezaiemaram, P., Tavallaie, A. (2012). The Effectiveness of a Group-Based Acceptance and Commitment Additive Therapy on Rehabilitation of Female Outpatients With Chronic Headache: Preliminary Findings Reducing 3 Dimensions of Headache Impact. Headache: The Journal of Head and Face Pain. doi: 10.1111/j.1526-4610.2012.02192.x. A small RCT (n=30) with a medical treatment as usual control condition. Chronic tension type of headache (63%) and chronic migraine without aura (37%) were the headache types reported by the participants. Data analyses indicated the significant reduction in disability ($F[1,29] = 33.72$, $P < .0001$) and affective distress ($F[1,29] = 28.27$, $P < .0001$), but not in reported sensory aspect of pain ($F[1,29] = .81$, $P = .574$), in the treatment group in comparison with the control group. Consistent with other ACT pain studies

This graph contains a cumulative record of the randomized clinical trial on Acceptance and Commitment Therapy through June 20, 2012 (including articles in press).



How to learn more about ACT

The association for contextual behavioural science

This is the main organization for ACT. It has a webpage with lots of clinical resources and announcements of upcoming events.

http://www.contextualpsychology.org/

ACT listserves

There are two internet groups, the international group, and the Australian and new Zealand group. These provide a forum for people to discuss ACT and to announce upcoming events.

International list server

acceptanceandcommitmenttherapy-subscribe@yahoogroups.com

Australian and New Zealand List server

acceptanceandcommitmenttherapy_ANZO-subscribe@yahoogroups.com