The efficacy of Acceptance and Commitment Therapy in reducing suicide ideation and deliberate self-harm; A Systematic Review.

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Abstract

Background: Acceptance and Commitment Therapy (ACT) has become a reputable evidence-based psychological therapy for certain disorders since its emergence in 1999. Trials examining the efficacy of ACT are spread across a broad spectrum of presentations such as chronic pain, anxiety and depression. ACT has very rarely been trialled as an intervention for suicide ideation (SI) or deliberate self-harm (DSH).

Objective: The objective of this review was to assess the efficacy of ACT in reducing SI and DSH, to examine reported SI and DSH outcomes and to examine whether a particular cohort of participants would be more likely to engage with an ACT trial targeting SI/DSH.

Methods: We conducted a systematic review of ACT trials for suicidal ideation and self-harm. An electronic search of databases, including MEDLINE, PubMed, EMBASE, PsycINFO, SCOPUS, as well as the Cochrane Central Register of Controlled Trials and the Cochrane Database of Systematic Reviews was conducted. Reference lists of included studies and relevant systematic reviews were examined to identify additional publications. Search terms were identified with reference to terminology used in previous review papers on ACT and suicide prevention. Study design was not limited to randomized controlled trials. Screening was completed by two reviewers and all duplicates removed. Publications were excluded if they were not published in English, were multicomponent therapy or not based on ACT, or lacked a validated measure or structured reporting of SI/DSH outcomes.

Results: After duplicates were removed 554 articles were screened for relevance. Following screening five studies were identified which used ACT as an intervention for suicidal or self-harming individuals. The methodologies used were diverse with two case studies, two pre-post studies and one mHealth randomized controlled trial.

Conclusions: The review found that ACT was effective for reducing suicide ideation in the two pre-post studies, but not in the other studies. However the very small number of studies
included coupled with their lack of methodological rigour means that as yet, there is insufficient evidence to recommend ACT as a treatment for reducing suicide ideation or deliberate self-harm.

**Keywords**
suicide ideation; deliberate self-harm; depression; mental health; acceptance and commitment therapy; cognitive behavioural therapy; mHealth; psychology; counselling

**Introduction**
Suicide is one of the leading causes of death globally with over 800,000 deaths estimated by the World Health Organization annually[1]. The impact of suicide is tragic and significant. It is estimated that, globally, for every person who dies by suicide, 20 more people attempt to take their life but do not die [1]. In the aftermath of a suicide the bereaved are many. Family members, friends and those close to the deceased are regarded at a higher risk of suicide themselves. Understanding methods of reducing suicide and implementing them is critical. Equally as critical is the prioritisation and recognition of suicide as a major public health problem, and approaching it as a problem that can be solved.

For the purposes of this review, suicide is defined as the act of deliberately killing oneself, and deliberate self-harm (DSH) is defined as any non-fatal suicide behaviour such as intentional self-injury, poisoning or self-harm with or without a fatal intent. Indeed findings indicate that suicide and DSH are preventable, with good results emerging for therapeutic approaches specifically targeting suicidal ideation [2-4] as well as reductions in suicidal ideation resulting from the treatment of depression and insomnia using Cognitive Behavioural Therapy (CBT) [5]. In short, cognitive behavioural therapy for suicidality has been tested in a number of randomized controlled trials (RCTs), with some evidence for its efficacy [6-8]. Cognitive behavioural therapy for suicide prevention (CBT-SP) and cognitive therapy for suicidal patients (CT-SP) have also had positive impacts on patients’ suicidal ideation [2, 3].
The ‘third wave’ of cognitive behavioural therapies, Dialectical Behavioural Therapy (DBT), Mindfulness Based Cognitive Therapy (MBCT) and Acceptance and Commitment Therapy (ACT) have established an evidence base over the last 15 years [9]. DBT has been found most effective in treating presentations of self-harm among those with Borderline Personality Disorder (BPD), and is frequently delivered as group therapy[10]. MBCT has become an acceptable alternative to CBT, where a therapist regards the practise of mindfulness activities a useful addition to standard CBT activities [11]. With strong evidence for these third-wave therapies for other indications [10-12], it is worth examining whether ACT shows promise in the area of suicide prevention.

ACT attempts to increase psychological flexibility mainly by targeting experiential avoidance – the tendency to avoid unwanted thoughts or emotions.[13] The six core processes of ACT are (1) Acceptance of uncomfortable private experiences (thoughts, feelings, or physical sensations), (2) Cognitive defusion/distancing from one's own uncomfortable thoughts, (3) Being present (directing attention to present events and experiences rather than focusing on the past or future), (4) Commitment to ongoing self-awareness, (5) Identification of personal values and (6) Commitment to action in line with the identified values. Since the publication of Acceptance and Commitment Therapy in 1999 by the treatment’s co-creators Steven Hayes, Kirk Strosahl, and Kelly Wilson[13] there has been an increasing number of ACT based RCTs.[9] Unsurprisingly, common mental health conditions such as depression, anxiety, addiction and stress have been treated with ACT as well as physical conditions such as chronic pain. [9, 14] [15] However, there is a dearth of trials examining the efficacy of ACT in targeting SI/DSH.

There is good reason to hypothesise that ACT may be effective in reducing SI and DSH by improving psychological flexibility. [16] Some of the predominant psychological frameworks that attempt to explain suicide include escape from pain as a key factor, particularly the entrapment/cry of pain model [17-19]. Escape, referred to as experiential avoidance, is one of the key target areas of ACT treatment. Application of mindfulness skills, acceptance of distress and diffusion from distressing thoughts may improve an individual’s ability to live with the discomfort of severe emotional pain. Finally, the identification of personal values and taking positive action aligned with these values may lead to a more integrated individual, and improved wellbeing as a consequence.
To date, there are no published reviews of ACT for SI or DSH. A 2014 meta-analysis of the efficacy of ACT examined 60 RCTs focusing on psychiatric disorders, somatic disorders and stress at work.[9] Of these studies, none examined SI/DSH or Suicidal Behaviour Disorder (SBD). A 2016 meta-analyses and meta-regression of studies examining the effectiveness of psychotherapy in reducing suicide attempts and non-suicidal self-injury rates included 32 RCTs, none of which included ACT as a treatment despite a brief mention of its promise.[20] For this review we wanted to examine (1) whether ACT is an efficacious treatment for SI or DSH; (2) what SI/DSH outcomes were measured; and (3) whether a particular cohort of participants would be more likely to engage with an ACT trial targeting SI/DSH.

Methods

This review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. [21]

Search Strategy and Selection Criteria

Systematic searches were conducted in the following electronic databases: MEDLINE, PubMed, EMBASE, PsycINFO, and SCOPUS, as well as the Cochrane Central Register of Controlled Trials and the Cochrane Database of Systematic Reviews. A comprehensive set of search terms were identified with reference to terminology used in previous review papers for ACT [9, 12] and suicide prevention[4, 22] and were combined with MeSH terms relevant to each of the databases. Search terms included ‘Acceptance and Commitment Therapy’ or ‘acceptance-based therapy’ and either ‘suicide’, ‘ideation’, ‘assisted suicide*’, ‘attempted suicid*’, ‘self injurious behaviour’, ‘self mutilation’, ‘self-harm’, ‘self-poison*’, ‘self-inflicted wounds’, ‘drug overdose’, ‘overdose’, or ‘parasuicid*’. In addition, the reference lists of all included studies, and relevant reviews were examined to identify any additional publications.

Despite the emergence of ACT in the late 1990s, no date restrictions were placed on searches which were completed on 11 December 2017. A study was eligible for inclusion if it satisfied the following criteria (1) Intervention was an Acceptance and Commitment Therapy intervention. Multi-component therapy types were excluded due to our interest in examining the efficacy of ACT when used as a standalone therapeutic intervention. Interventions could be delivered to individuals, groups, or using technology; (2) Study outcomes assessed suicidal behaviour using a validated measure or structured reporting. Suicidal behaviour was
defined in its broadest terms ranging from suicidal ideation to the various forms of self-harm as indicated in the search terms; and (3) studies were original peer-reviewed articles published in English. Given the recency of third-wave interventions, study design was not restricted to RCTs, rather all research designs were included (e.g. RCTs, quasi-experimental, pre-post, single group, and case studies). Finally, there was no restriction on the age of participants. Appendix 1 provides details of search terms.

Selection Process
After the removal of duplicates, two researchers (JT and JN) independently reviewed all titles and abstracts that were returned by the search for relevance. Studies considered irrelevant by both reviewers were excluded. The full text of the remaining articles was then independently examined by the same two authors to confirm eligibility. Included articles and reasons for exclusion were compared to achieve consensus and, where necessary, disputes were settled by a third researcher (FS).

Data extraction
One author (JT) extracted the study characteristics and outcome variables, which were independently checked by JN. The following variables were extracted: author name, publication year, sample type, control group details, program format, participant age, program length, and follow-up interval. Outcome data on SI/DSH, depression and psychological flexibility (acceptance and mindfulness) were also extracted.

Risk of bias
Study quality and risk of bias of the included RCT were assessed using the Cochrane Collaboration ‘Risk of Bias’ tool. [23]

Results
Study selection
The database search identified 590 articles. After duplicates were removed (n=37), the titles and abstracts of the remaining 554 articles were screened for relevance, with 527 excluded. The full text of the 27 remaining articles was then examined, resulting in five studies being included in the review (Figure 1).
Study characteristics

Characteristics of included studies are presented in Table 2 and outcome variables are presented in Table 3. All five focused on individual therapy rather than group. Included are one mHealth RCT (N=61), two pre-post studies (N=981, N=35) and two case studies (N=2, N=3).
Study quality and risk of bias

As only one RCT was included the risk of bias has only been completed for this study as below (Table 1). Overall, the study was judged to have a low risk of bias across all domains except blinding of participants and personnel (high risk).

Table 1: Risk of bias for Tighe et al (2017) [24]

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<tr>
<th>Entry</th>
<th>Judgment</th>
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<tr>
<td>Random sequence generation (selection bias)</td>
<td>Low risk</td>
<td>Quote: “using block randomisation stratified by gender (16 per block), using computer-generated randomisation”</td>
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<td>Comment: Probably done.</td>
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<td>Allocation concealment (selection bias)</td>
<td>Low risk</td>
<td>Quote: “Each block randomisation was performed offline by a member of the research team at the Black Dog Institute and sent to the research officer in Broome.”</td>
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<tr>
<td>Blinding of participants and personnel (performance bias)</td>
<td>High risk</td>
<td>Quote: “research officer in Broome who was responsible for and not blind to the intervention allocation”</td>
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<tr>
<td>Blinding of outcome assessment (detection bias) (patient-reported outcomes)</td>
<td>Low risk</td>
<td>No blinding of outcome assessment used as outcome measures were self-report. Unlikely that the outcome measurement would be influenced by blinding.</td>
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<tr>
<td>Incomplete outcome data addressed (attrition bias)</td>
<td>Low risk</td>
<td>Follow up: minimal missing data. 2/31 missing from intervention group; 0/30 missing from control group. Reasons unlikely to be related to outcome.</td>
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<td>Selective reporting (reporting bias)</td>
<td>Low risk</td>
<td>Quote: “The study protocol has been published.”</td>
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<tr>
<td>Authors</td>
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<tr>
<td>Tighe et al (2017)</td>
<td>Indigenous Australian Youth ages 18-35 (N=61)</td>
<td>ACT mHealth app (ibobly)</td>
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<tr>
<td>Walser et al (2015)</td>
<td>Veterans (N=981)</td>
<td>ACT-D (specifically designed for veterans)</td>
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<td>Ducasse et al (2014)</td>
<td>Psychiatric Patients (n=37)</td>
<td>ACT</td>
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<td>.Louma &amp; Valatte (2012)</td>
<td>Case Studies (N=2)</td>
<td>ACT</td>
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<tr>
<td>Rassaque et al (2012)</td>
<td>Case Studies (N=3)</td>
<td>ACT</td>
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Table 3: Outcome measures reported in included studies.

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<td>Suicidal Ideation (Self-assessment Visual Analogue scale)</td>
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<td>Columbia-Suicide Severity Rating Scale (C-SSRS) (suicidal ideation subscore = severity and intensity items)</td>
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<td>Suicidal Ideation (DSI-SS)</td>
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<td>Beck Depressive inventory-II (BDI-II)</td>
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<tr>
<td>Patient Health Questionnaire (PHQ-9)</td>
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<td>Kessler 10 (K10)</td>
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<tr>
<td>Barrett Impulsivity Scale (BIS-30)</td>
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<td>Acceptance and Action Questionnaire (AAQ-II)</td>
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<td>Five Facet Mindfulness Questionnaire (FFMQ)</td>
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<td>Inventory of Depressive Symptomatology (IDS-C30)</td>
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<td>Functioning Assessment Short Test</td>
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<td>Pharmacological treatment &amp; number of visits for psychiatric emergencies (previous 3 months)</td>
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<td>Psychological pain on a visual analogue scale</td>
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<td>State-Trait Anxiety Inventory (STAI); Beck Hopelessness Scale</td>
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<td>World Health Organization Quality of Life measure</td>
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<td>Clinical Global Index (CGI)</td>
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Included Studies


This study aimed to evaluate the effectiveness of an ACT-based self-help mobile app (ibobbly) targeting suicidal ideation, depression, psychological distress, and impulsivity among Indigenous youth in remote Australia. A two-arm randomized controlled trial of 61 Indigenous Australians aged 18-35 years was conducted in the Kimberley region of Western Australia. The mean age was 26 years (SD=8.1); 64% identified as female. Group one
received the ibobbly app immediately, which delivered acceptance-based therapy over six weeks. Group two were waitlisted for six weeks and then received the app for the following six weeks. The primary outcome was the Depressive Symptom Inventory – Suicidality Subscale (DSI-SS) [25] to identify the frequency and intensity of suicidal ideation in the previous weeks. Secondary outcomes were the Patient Health Questionnaire 9 (PHQ-9) [26], The Kessler Psychological Distress Scale (K10) [27], and the Barratt Impulsivity Scale (BIS-11) [28]. The key outcome variable for this review is the DSI-SS.

Although a significant improvement in suicidality was reported post-intervention in the ibobbly arm (t=2.40; df=58.1; p=0.0195), this difference was not significant compared to the waitlist arm (t=1.05; df=57.8; p=0.2962). However, participants in the ibobbly group showed substantial and statistically significant reductions in PHQ-9 and K10 scores (42% and 28% respectively) compared to waitlist (p=0.007 and p=0.017 respectively). No differences were observed in impulsivity. Waitlist participants also improved on suicidal ideation and depression measures after six weeks of app use.

**Study 2: Walser et al (2015) [29]**

Walser et al (2015) conducted a pre-post evaluation measuring the effectiveness of ACT in treating depression and suicidal ideation in a group of Veterans (N=981). They utilized a modified version of ACT for depression (ACT-D) designed specifically for veterans. Mean age was 50.5 years (SD=12.5) and 75% of participants identified as male. The intervention, covering the six core processes of ACT, was administered in 12-16 individual psychotherapy sessions. Depression and suicide ideation were measured using the Beck Depressive Inventory (BDI-II).[30] Experiential acceptance and mindfulness (two goals of ACT) were also measured to determine their impact on both depression and SI. Experiential acceptance was measured with the Acceptance and Action Questionnaire (AAQ-II)[31] and mindfulness was measured with the Five Facet Mindfulness Questionnaire (FFMQ)[32]. The key outcome variable for this review is the BDI-II (suicide item).

The percentage of participants with no SI increased from 44% at baseline to 65% at follow up as SI scores decreased significantly. Depression was significantly reduced on the BDI-II with scores reducing by 32% and 40% in participants with and without SI at baseline respectively. Increases in mindfulness scores were associated with a reduction in depression severity
across time (p=0.042). Decreases in experiential avoidance scores were associated with a reduction in SI across time (p=0.016), but mindfulness scores were not significantly related to SI scores over time.

**Study 3: Ducasse et al (2014) [33]**

Ducasse et al conducted a pilot study of adjunctive ACT in 2014 with a cohort of French outpatients (N=35) diagnosed with Suicidal Behaviour Disorder based on DSM-5 criteria. [34] All had attempted suicide in the previous year and the study featured a program of ACT as an add-on to treatment-as-usual. Fifty-seven percent of participants identified as male and the median age was 38.4 years (range 18 to 60, no mean age reported). Seven individual weekly sessions of two hours each were delivered, and written summaries were provided at the end of each session for practice at home. One suicide was reported in the first month of the study, which the authors report had no clear link to the study. Measures were taken at one week prior to program, one week post-program, and three months after program completion. The Columbia-Suicide Severity Rating Scale (C-SSRS) [35] and the Scale for Suicidal Ideation (SSI) [36] were administered by psychiatrists as was the Inventory of Depressive Symptomatology (IDS-C30). [37] Self-assessments included (1) suicidal ideation on a visual analogue scale from 0 (none) to 10 (maximum); (2) depression severity using the Beck Depression Inventory-II, [30] (3) Psychological pain on a visual analogue scale from 0 (none) to 10 (maximum); (4) anxiety state using the State-Trait Anxiety Inventory (STAI), [38] (5) hopelessness using the Beck Hopelessness Scale, [39] (6) quality of life using the World Health Organization Quality of Life measure,[40] and (7) acceptance using the Acceptance and Action Questionnaire (AAQ).[31] The key outcome variables for this review were the C-SSRS and the SSI.

There were significant differences recorded on all scores between the three visits (p< 0.001). There was a significant reduction from pre-intervention to the one-week post-program follow up on the C-SSRS ‘suicidal ideation’ sub-score [20 (0–30) vs. 0 (0–20), respectively; p < 0.001], and SSI score [7 (0–22) vs. 0 (0–10); p < 0.001]. Intensity of current and previous suicidal ideations during the last 15 days were both significantly reduced between inclusion and one-week post-program follow up [1 (0–10) vs. 0 (0–3), 2 (0–9) vs. 0 (0–5), respectively; both p < 0.001]. The suicidal ideation (C-SSRS) sub-score was correlated to the AAQ score (p = 0.04, r = −0.37) but not to BDI-II score. At three-month follow-up all suicidal ideation scores remained significantly lower however the actual scores were not reported. This study
Study 4: Luoma, J. B. and Villatte, J. L (2012) [41]

The Louma and Villatte 2012 reported on two case studies, one patient with chronic suicidal ideation and one with transient suicidal ideation who were treated “largely from an ACT perspective”.

Case Study 1

‘Anne’ (22) was referred to a DBT clinic by a community therapist to help to deal with intense emotional dysregulation, deliberate self-injury, and suicide risk. ACT sessions were administered while on the waitlist for DBT. Anne’s background includes severe physical and sexual abuse, bulimia, drug and alcohol abuse, and DSH. Anne met criteria for multiple Axis I and II disorders, [34] including posttraumatic stress disorder, bulimia, borderline personality disorder, and cocaine and alcohol abuse. Anne had also been struggling with persistent suicidal thoughts and had a history of suicide attempts. Over the course of therapy significant increases on the FFMQ [32] were reported in line with overall decreases in symptomatology and borderline features. Authors reported a reduction in SI and DSH, but did not state the measures used. After 18 treatment sessions Anne’s level of psychological distress had fallen to subclinical levels on two symptom inventories (not specified in the paper). Treatment continued bi-weekly for 20 additional weeks before termination. At one-year follow-up, Anne’s mindfulness scores remained high and she no longer met current criteria for any psychological disorder.

Case study 2

Significantly less background information was provided for the second case study featuring a 47 year old male. ‘Mark’ initiated therapy after attempting suicide shortly after losing his family in a motor vehicle accident. Although psychological measures are not described by the authors, after six months of ACT, authors report that Mark no longer considered suicide a viable option.
**Study 5: Razzaque (2012) [42]**

Razzaque’s 2012 study details the delivery of ACT to three patients on the psychiatric intensive care unit of Goodmayes Hospital in East London. All three had a lengthy history of regular bouts of violence towards themselves or others. The first had a primary diagnosis of schizoaffective disorder, with an average of two to three psychiatric admissions per year. The second and third participants were diagnosed with bipolar affective disorder. Their presentations included frequent bouts of violence toward themselves, family members, carers, and ward staff. The treatment consisted of 20 minute one-to-one ACT sessions delivered daily over two to three weeks.

Violence and aggression towards others was measured in addition to measuring the expression of self-harm and/or suicidal ideation. Aggressive and abusive behaviours were recorded in regular nursing shift reports. No specific measure was used for measuring self-harm or suicidal ideation however interviews and ward reviews were used to record changes in self-harm expression and suicidal ideation. A marked reduction in self-harm and suicidal ideation was reported for the patient with a diagnosis of schizoaffective disorder in addition to reduced derogatory auditory hallucinations. The two patients with a diagnosis of bipolar disorder showed a clear reduction in aggressive and abusive behaviour.

**Discussion**

This review aimed to understand if Acceptance and Commitment Therapy has been used successfully to reduce suicide ideation or self-harm, and whether it works for particular target symptoms or particular groups. The review found few empirical investigations of ACT specifically targeting the reduction of SI/DSH, with only one of the five studies identified being a RCT. This is the first review we are aware of that has examined the impact of ACT on the reduction of SI/DSH.

All five studies examined SI using a variety of measures and only the two case-studies examined DSH. All studies reported a reduction in suicide ideation or DHS over the course of the intervention. This size of the reduction in SI varied but Tighe et al [24] reported a 30% reduction in SI scores and Walser et al reported a 20.5% reduction in the prevalence of SI among participants at follow up. [29] Ducasse et al reported significant reductions in all SI measures at one–week and three-month follow up. [33] However, as the ACT component of
the participant’s therapy was an add-on to treatment-as-usual, this diminishes the effective
evaluation of the ACT treatment. The authors of this trial concluded that ACT may help
reduce the intensity and frequency of SI due to increases in acceptance, valued action and a
reduction in risk factors such as hopelessness and psychological pain. [33] The two case-
studies measured and reported a reduction in both SI and DSH. [41, 42]

Three of the five studies reported outcomes for depression. Tighe and colleagues [24] found
that depression scores in the intervention group reduced by 42%, a significant reduction
compared to the waitlist group. Walser et al [29] reported a 32% reduction in depression
scores for the cohort of veterans that recorded SI at baseline. This study also reported a 40%
reduction in depression scores for those without SI at baseline. Ducasse et al’s pre –post study
lacked a control group yet showed significant reductions for all measures including
depression. [33] These positive results of ACT on depression support recent research
highlighting the promise of ACT for common mental health conditions such as depression
and anxiety. [9] [43] Further, as the included studies report reductions in depression and
reductions in SI, this supports previous research demonstrating that reductions in depression
can lead to reductions in SI. [44][45]

The five studies included three distinct cohorts of participants. Tighe et al’s [24] mHealth
United States army and Ducasse et al [33] targeted French outpatients diagnosed with
Suicidal Behaviour Disorder. In the two papers reporting on case studies, three of the five
participants were suffering from severe distress in hospital settings. Across these diverse
populations ACT was positively associated with the reduction of SI. The methodological
quality of the studies was low, with just one (Tighe et al) [24] including a control group. The
two studies that reported positive results on SI through case-studies (N=2 and N=3) had too
few participants and lacked robust research frameworks from which to draw conclusions. [41,
42] Both studies report impressive reductions in SI for all five individuals studied; however
the studies had many limitations, including lack of specificity around how SI and self-harm
reports were measured (apart from hospital ward reports). There is also a lack of detail on
what treatment-as-usual entailed such as the administration of medication to participants. In
summary despite the diversity in participants across the studies they are too few to claim that
any particular group more so than others are suited to an intervention of ACT for SI/DSH. It
is worth considering that the only RCT included delivered therapy through a self-help mobile app [24] and whether this is indicative of an increasing adoption of mHealth. [46-48]

ACT was associated with symptom change for all five studies, providing a rationale for more systematic and larger scale research evaluations. Tighe et al’s [24] trial showed significant reductions for depression and distress on standardised measures and a 30% reduction in SI scores (although this was non-significant between groups). All five participants whose case studies were presented improved significantly with marked reductions in SI/DSH. [41, 42] In addition to the significant results for SI in the two pre-post studies, both of these studies showed improvements on the AAQ, a measure of psychological flexibility. [29, 33] Walser et al’s [29] study showed that improvements on the AAQ were associated with a reduction in SI scores across time. Similarly, Ducasse et al found a significant correlation between SI and AAQ scores, such that increased acceptance was associated with reduced SI. [33] Accepting reality and reducing avoidance are both fundamental aims of ACT and this therapeutic work is aligned with theories of suicide that focus on an individual’s sense of entrapment and/or desire to escape their current reality [17-19]. Further trials are needed to test how increases in experiential acceptance and mindfulness impact on SI/DSH scores and whether targeting these factors might lead to greater reductions in SI/DSH.

**Conclusion**

There are too few studies included in this review to claim that ACT can effectively assist in the reduction of SI/DSH. Although very limited research has been conducted to date, ACT remains a good candidate for further testing of its efficacy in reducing SI or DSH. Further studies, particularly controlled trials, are needed in this critical area, and this early evidence suggests focus should also be on potential mechanisms of action, such as changes in experiential avoidance and mindfulness.

**Acknowledgments**

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Author’s Contributions

JT and JN reviewed all publications for relevance and FS settled disputes. All authors made substantial contributions to the review design, writing and editing.

Conflicts of Interest

None Declared

References

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**Abbreviations**

ACT: Acceptance and Commitment Therapy

AAQ-II: Acceptance and Action Questionnaire

ACT-D: ACT for depression

BDI-II: Beck Depressive Inventory

BIS-11: Barratt Impulsivity Scale

BPD: Borderline Personality Disorder

C-SSRS: Columbia-Suicide Severity Rating Scale

CBT: Cognitive Behavioural Therapy

CBT-SP: Cognitive Behavioural Therapy for Suicide Prevention

CT-SP: Cognitive Therapy for Suicidal Patients

DBT: Dialectical Behavioural Therapy

DSH: Deliberate Self-harm

DSI-SS: Depressive Symptom Inventory – Suicidality Subscale

FFMQ: Five Facet Mindfulness Questionnaire

IDS-C30: Inventory of Depressive Symptomatology

K10: Kessler Psychological Distress Scale

MBCT: Mindfulness Based Cognitive Therapy

PHQ-9: Patient Health Questionnaire 9

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

RCT: randomized controlled trial

SBD: Suicidal Behaviour Disorder

SI: Suicide Ideation

SSI: Scale for Suicidal Ideation

STAI: State-Trait Anxiety Inventory