



School of Psychology

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Acceptance and Commitment Therapy as a School-Based Intervention for Mental Health and Wellbeing

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Preface

The rates of reported mental health difficulties are growing amongst young people, therefore increasing attention has turned to the school environment in supporting the mental health and wellbeing of this population. There is a distinct need for more evidence-based interventions applicable to a school setting in order to support schools in providing effective interventions to their students. The aim of this research is to review the existing literature on Acceptance and Commitment Therapy (ACT) interventions based in secondary schools, and to evaluate the efficacy of a novel universal school-based ACT intervention on students' self-reported wellbeing and mental health. This research is presented in two parts: a systematic review, and an empirical paper.

The systematic review aimed to evaluate the methodological quality and examine the effectiveness of all peer-reviewed literature on ACT interventions based in secondary schools that target mental health and wellbeing outcomes. Searches of relevant databases found nine studies that met inclusion criteria. Methodological quality of the included studies was assessed and findings related to mental health and wellbeing outcomes were summarised using a narrative synthesis. Results were mixed across studies, however a number of studies found statistical significance and large effect sizes for depression, anxiety and particularly stress. Methodological quality was found to vary significantly across studies, impacting upon the validity of the findings. Studies were heterogeneous with regard to study design, intervention type and format, and outcomes measured, therefore this review was unable to draw firm conclusions regarding the factors that moderate the effectiveness of ACT as a school intervention. There is a need for more research into this growing area, and a focus on increasing the methodological rigour of future studies.

The empirical paper reports on a cluster-randomised controlled trial (RCT) evaluating the efficacy of a brief universal secondary school-based ACT intervention on student's wellbeing and mental health. Six UK secondary schools were recruited to this study and classes of students from year-eight (aged 12-13 years) were randomly allocated to either an intervention or control

condition. Students in the intervention condition received a three session ACT workshop delivered by a teacher and school counsellor dyad. This intervention was found in a previous study to be acceptable to students and feasible to deliver in a school setting. The control group consisted of students attending their normal lessons. Students in both conditions completed outcome measures pre-intervention, post-intervention, and at a six week follow up measuring outcomes of wellbeing, anxiety, depression, stress and mindfulness. Qualitative data on student experience of attending the workshops was also collected to aid future development of this intervention. Results found a significant positive impact of the ACT intervention on stress, however no significant findings across any of the other outcomes. Potential confounds that may have impacted outcomes due to the study context were explored. Despite some limitations, this study adds to the evidence base for ACT as the first UK RCT of a school-based ACT intervention, and generates several ideas for future research. This study provides a comprehensive protocol for a larger future trial.

This research contributes to the growing momentum in the literature on ACT for young people, by both summarising existing research and adding to the evidence base for the implementation of ACT in schools. This research helps to further understanding of how we can support the mental health of young people in accessible and pragmatic ways, in line with UK policy and guidance.

Paper 1: Systematic Literature Review

Acceptance and Commitment Therapy Interventions in Secondary Schools and their Impact on Students' Mental Health and Well-being: A Systematic Review

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Abstract

In order to meet the growing need for mental health provision for young people, more attention has turned to schools to provide evidence-based interventions. Acceptance and Commitment Therapy (ACT) has been demonstrated in recent reviews and meta-analyses to be effective with young people, however to date no systematic reviews have examined the use of ACT as a school-based intervention.

This systematic review aimed to evaluate the methodological quality and examine the effectiveness of all peer-reviewed literature on ACT interventions based in secondary schools.

The PsycInfo, Scopus and Web of Science databases were searched for studies published in any year reporting on the use of ACT interventions based in secondary schools aiming to prevent or reduce mental health difficulties or promote wellbeing. Both universal and targeted studies were eligible for inclusion. Nine studies met inclusion criteria, with a total of 1324 participants across studies (age range 13-21 years). Methodological quality of the included studies was assessed using the Psychotherapy Outcome Study Methodology Rating Form (POMRF), and findings related to mental health and wellbeing outcomes were summarised using a narrative synthesis.

Outcomes measured across all studies were depression, anxiety, anger, psychological capital, stress, wellbeing, life satisfaction, psychological health, emotional problems and mental health symptoms. Six studies also used process measures to explore different constructs linked to psychological flexibility, the mechanism of change in ACT. There was significant variation in methodological quality across studies. The most common methodological weaknesses were a low sample size, lack of a follow up data point, lack of checks for treatment adherence and therapist competence, and lack of comparison with another active treatment. The existing evidence for the effectiveness of ACT-based interventions delivered in school settings on improving mental health and wellbeing is somewhat variable. This review found statistical significance for outcomes of depression in one study, psychological capital in one study, stress in three studies and anxiety in one

study. Other studies did not find statistically significant results, however large effect sizes were found across a number of the outcomes measured, suggesting that more highly powered research may be needed to obtain significance.

Despite methodological weaknesses across studies, there are some promising results to show support for the use of ACT as a school-based intervention. As existing studies were heterogeneous with regard to design and outcomes measured, this review was unable to draw firm conclusions regarding the efficacy of ACT or the moderating influence of program type, program format or program delivery. More highly powered studies comparing ACT to other active treatments are needed in order to explore these questions further.

This systematic review is registered on the PROSPERO database under the ID CRD42020197295.

Keywords: 'Acceptance and Commitment Therapy', 'systematic review', 'school', 'mental health', 'wellbeing'

Acceptance and Commitment Therapy Interventions in Secondary Schools and their Impact on Students' Mental Health and Well-being: A Systematic Review

By the age of 18 years, approximately 20% of young people will have experienced a mental health problem (Costello et al., 2003; Kieling et al, 2011). Poor mental health can impact upon many areas of a young person's life including poor engagement with education, increased health risk behaviours as well as self-harm and suicide (Collins and Dozois, 2008; Patel et al., 2007). In an analysis of National Health Surveys between 1995 and 2014, Pitchforth et al. (2019) found a consistent increase in long-standing mental health conditions in young people aged 4-24 years. Over this 19-year period, the prevalence of mental health conditions increased sixfold in England, more than doubled in Scotland and increased by more than half in Wales.

There is an increasing recognition of the importance of early life experiences for lifetime mental health problems, which further highlights the necessity to address the mental health needs of young people. Research has found that 50% of adults with mental health problems first experienced them prior to age 15, and 75% of life-time mental health problems appear by age 24 years (Kessler et al., 2005). Research shows that mental health prevention in young people is key, as this is a sensitive period during the lifespan where protective factors such as building resilience could have significant and long-lasting consequences (Black et al., 2017).

Despite the increasing mental health needs of young people, statistics show that one in three Child and Adolescent Mental Health Services (CAMHS) referrals made by schools are not accepted, and one in six referrals not accepted overall (NSPCC, 2017). Restricted access to specialist services has meant that increasing attention has turned to mental health promotion and prevention in schools, due to their broad scope and existing structures to support child development (Domitrovich et al., 2010; Masia-Warner et al., 2006).

Schools are a key environment to provide mental health programmes for young people outside of clinical settings as they are safe, cost-effective and flexible places in which a diverse range

of interventions can be offered (Marks, 2012). Wolpert et al. (2011) highlight how schools can often be more accessible ways for young people to access support, particularly for those from socio-economically disadvantaged families. School-based support has been associated with reduced stigma and increased engagement, especially among ethnic minority adolescents (Stephan et al. 2007). Therefore, school-based intervention programs provide a promising opportunity for low-threshold care, with the potential to reach adolescents who may be unlikely to access support in clinical settings.

The need to engage schools in supporting the mental health of young people has been recognised in UK policies and guidance. In 2017, the UK Government published a Green Paper for 'transforming children and young people's mental health', which detailed proposals for expanding access to mental health provision for young people, with a specific focus on additional support through schools and colleges. In Wales, the 'Curriculum for Wales Guidance' outlines plans to build health and wellbeing into the core of the new curriculum by defining it as one of the six 'Areas of Learning Experience' for Welsh schools from 2022 onwards (Welsh Government, 2020).

School-based interventions for mental health and wellbeing can be broadly grouped into three types; universal, selective and indicative approaches (Neil and Christensen, 2009). Both selective and indicative interventions are often referred to in research as 'targeted' interventions. Universal interventions are offered to all students regardless of risk or symptom status and are often aimed at enhancing wellbeing, resilience and promoting positive mental health (Barrett and Turner, 2004). Research has demonstrated that school staff generally have a preference for universal interventions due to their broad application, as well as the reduced time and stigma associated with running interventions that do not require students to be screened for mental health symptoms. (Horowitz et al., 2007). Selective intervention programs target students deemed at risk of mental health problems, due to individual or environmental characteristics such as socio-economic

background. Indicative approaches are aimed at students identified as having existing low-moderate symptoms of a mental health problem, commonly anxiety or depression.

There have been a number of systematic reviews conducted to date on the effectiveness of school-based interventions. Reviews exploring the effectiveness of universal interventions have generally found positive yet small effects of the interventions on outcomes including anxiety, depression and externalising problems (Caldwell et al, 2019; Dray et al., 2017; Mackenzie and Williams, 2018). The studies included in these reviews predominantly based their interventions on a Cognitive Behavioural Therapy (CBT) approach.

A number of recent systematic reviews have compared universal, selective and indicative interventions delivered in schools. Corrieri et al. (2014) compared universal and indicative interventions for both depression and anxiety and found that although both types of interventions showed similar levels of effectiveness across outcomes, only the indicative programs maintained their benefits at follow up. Werner-Seidler et al. (2017) similarly compared these two types of interventions on depression and anxiety outcomes and found that whilst the outcomes for anxiety were comparable, universal interventions produced smaller effects for depression than targeted programs. Across both reviews, small to moderate effects for the interventions were found. A review by Feiss et al. (2019) examined the outcomes of both universal and targeted interventions for depression, anxiety and stress. It was found that universal and targeted interventions were both effective at significantly reducing anxiety, however universal interventions were more effective in a higher dose of the intervention whereas targeted interventions were not affected by dose. Targeted interventions were more effective for both depression and stress than universal interventions, however only significant results for depression were found. In this study, none of the benefits were maintained at follow up for either intervention type.

Two of these reviews evaluated the moderating factor of intervention content on program effectiveness. Werner-Seidler et al. (2017) found that program content did not moderate program

effectiveness, whereas Dray et al. (2017) found that CBT interventions were more effective than non-CBT based interventions including positive psychology, mindfulness and social and emotional learning. Of the studies reviewed in Dray et al. (2017), 54% used a CBT approach.

In summary, there are several existing reviews demonstrating small yet positive effects of school-based interventions on mental health and wellbeing, with slightly higher levels of effectiveness reported for targeted compared to universal interventions. The approach predominantly used across studies to inform the interventions is CBT, and there appears to be a distinct lack of a comparable research base using other therapeutic approaches.

Acceptance and Commitment Therapy (ACT), an approach demonstrated in recent meta-analyses to be effective in young people across a range of outcomes (Swain et al., 2015; Fang and Ding, 2020), was not used in any of the studies included in the current reviews of school-based interventions. Gillard et al. (2018) have identified ACT as a coherent model that has the potential to support schools in promoting wellbeing in children due to its clear health benefits.

Acceptance and Commitment Therapy (ACT) is a third wave therapeutic approach that uses acceptance and mindfulness strategies, together with identification of values and commitment to values-based living (Forman and Herbert, 2009; Hayes et al., 2006). The primary goal of ACT is not to reduce mental health symptoms but to increase psychological flexibility (Hayes, 2004). Psychological flexibility is defined as “the ability to be in the present moment with full awareness and openness to our experience and to take action guided by our values” (Harris, 2009, p.12). ACT is a transdiagnostic approach, which can be used in a range of both mental health and physical health conditions such as chronic pain (Swain et al., 2015). This suggests ACT may be particularly suitable for non-targeted interventions as it does not depend upon a disorder-specific formulation model.

ACT is based on Relational Frame Theory (RFT), which emphasises the role of human language development and cognition, specifically the significance of associations made between words and events (Hayes 2004; Hayes et al., 2006). Functional contextualism is the philosophical

stance behind RFT, which highlights the importance of context and the function of internal experiences such as thoughts, emotions and memories (Hoffman and Asmundson, 2008). ACT posits that it is not the content of internal experiences that causes distress but the context in which they take place (Hayes et al., 2006; Hayes et al., 2004). Emotional distress is perceived as resulting from the experiencing of painful or difficult thoughts and feelings as intolerable, and the use of avoidance or suppression as a way to escape distress (Luoma et al., 2007). The process of avoidance and suppression has the paradoxical effect of increasing the salience of the distressing internal experiences, which subsequently reduces a person's ability to live a valued and meaningful life. Therefore, the focus of intervention in ACT is a person's relationships with their internal experiences, rather than altering the internal experiences themselves.

In ACT, psychological flexibility is targeted using six inter-relational core therapeutic processes that form a "hexaflex" model of psychological flexibility: acceptance of internal experiences; cognitive defusion (interpreting thoughts as thoughts, as opposed to facts); mindfulness (present moment awareness, without judgement); self-as-context (detaching from unhelpful narratives about the self); identification of personal values; and committed action towards a valued life (Luoma et al., 2007).

There are several elements of ACT which suggest it may be particularly suitable for young people. ACT relies less on talking during active therapy and uses experiential exercises and metaphor to introduce and practise key ideas. The use of experiential exercises and metaphors to link abstract concepts to concrete examples is particularly encouraged when working with adolescents, as this helps to support the cognitive shift from concrete to abstract thinking that occurs during adolescence (Halliburton and Cooper, 2015; Greco et al., 2005). Additionally, the focus on identification of values and commitment to valued action helps the adolescent to apply new skills and learning to their wider context, as opposed to the primary focus of symptom-reduction often found in other approaches such as CBT (Hoffman and Asmundson, 2008). This focus on identifying

values can be particularly important for adolescents who are at a time in their lives where they are exploring their sense of identity and striving for autonomy (Casey et al., 2008).

There are two existing systematic reviews that have looked specifically at the use of ACT with young people. A systematic review by Swain et al. (2015) examined the use of ACT with children and young people aged 8-18 years across both physical and mental health difficulties. The authors concluded that in young people, ACT is more effective than control conditions across several problem domains. A more recent meta-analysis by Fang and Ding (2020), examined 14 randomised controlled trials (RCTs) on the efficacy of ACT in children and adolescents. From their findings, the authors concluded that ACT is more effective than treatment as usual and untreated comparison groups in treating anxiety and depression, but was not superior to CBT. It was also found that ACT led to increases in quality of life and wellbeing compared to the untreated group, however ACT did not outperform CBT or treatment as usual. It was concluded that more high-quality research with improved methodology is needed to understand the efficacy of ACT for young people.

Aims and review question

In summary, existing systematic reviews focused on the use of mental health interventions in school settings have found positive yet small effects when using predominantly CBT-based approaches. Recent systematic reviews have presented good evidence for the effectiveness of ACT with young people, however to date no systematic reviews have examined the literature on the use of ACT in school settings. Therefore, this systematic review aims to examine ACT interventions in secondary schools and their impact on students' mental health and wellbeing.

Specific research questions are:

- 1) How has ACT been applied to secondary school mental health and wellbeing interventions within existing studies?
- 2) How effective are ACT interventions based in secondary schools on improving students' mental health and wellbeing?

3) How methodologically robust are these studies?

Method

Search and screening procedures

PsycInfo, Scopus and Web of Science databases were electronically searched for published literature. These databases were chosen to give access to articles published in journals related to psychology and health. A list of keywords and terms were developed to identify relevant literature. From the preliminary searches it was clear that broad search terms were needed in order to capture all relevant studies. The search terms included were as follows:

“acceptance and commitment therapy”

AND

“school*” OR “adolescen*” OR “student*” OR “child*” OR “young*”

Titles and abstracts of studies from the initial database searches were screened according to pre-determined inclusion and exclusion criteria (see Table 1). The full texts were then retrieved and screened according to the same inclusion and exclusion criteria.

For each included study, manual searches of reference lists were conducted and citation searches undertaken to locate additional potential studies for inclusion. These additional studies were then subject to the same screening procedures as those identified through initial database searches.

Table 1*Inclusion and Exclusion Criteria*

Criteria	Inclusion	Exclusion	Rationale
Participants	The age range will generally be 11-18 as this represents the majority of young people attending secondary school. However, young people aged up to age 21 will be included if still attending a secondary school setting.	Participants younger than 11 or older than 21.	Adolescence is a key time for intervention in order to prevent lifetime mental health difficulties (Kessler et al., 2005).
Setting	Studies based in secondary schools.	Study is in a home setting, university, college or primary school. Studies where students were recruited from secondary schools however the intervention was not school-based.	Secondary schools are considered a key environment to deliver mental health programmes for young people outside of healthcare settings, as they are safe, cost-effective and flexible places in which a diverse range of interventions can be offered (Marks, 2012).
Intervention	Studies where Acceptance and Commitment Therapy has been used as a school-based intervention. The intervention can be either targeted to specific groups of students or non-targeted (universal). The intervention can be delivered to groups or individuals.	Any study which only uses specific parts of Acceptance and Commitment Therapy in the intervention (e.g. mindfulness) or uses it in combination with one or more other therapeutic approaches.	This review aims to examine the impact of Acceptance and Commitment Therapy interventions.

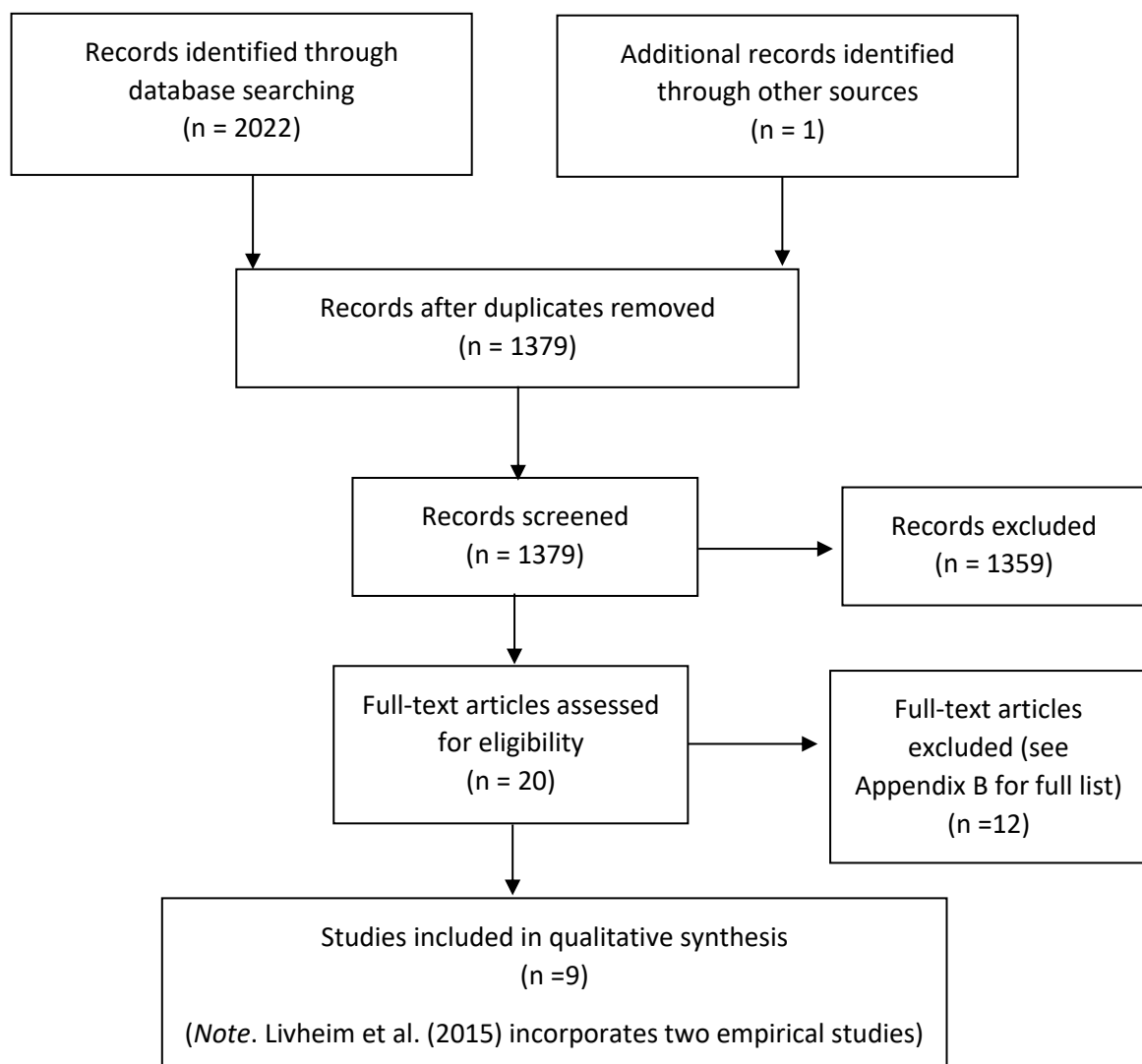
	The intervention can be of any duration, including single-session interventions.		
Type of study	Intervention studies of all design types, from randomised controlled trials (RCT) to case studies, will be included within this review.	Review papers or observational, correlational or qualitative studies.	To ensure access to all studies that examine the effectiveness of Acceptance and Commitment Therapy interventions.
Outcome variables	At least one of the primary outcome measures is related to mental health or wellbeing.	Primary outcome measures that are related to other areas e.g., academic achievement/performance.	There is a growing concern about the mental health and well-being of children and young people in the UK, with increasing demand for specialist services as well as increased hospital admissions (Pitchforth et al., 2019).
Date	No date of publication limits will be applied to these searches.	No date of publication limits will be applied to these searches.	To ensure access to all relevant articles.
Language	Searches will be limited to only those publications written in English.	Publications not written in English.	No access to a translator.
Type of publication	Empirical studies published in peer reviewed journals.	Conference papers, book chapters, discussion papers and grey literature.	To ensure quality of studies.

Eligible studies

2022 records were identified through the initial database searches. This was reduced to 1379 following removal of duplicates. An additional record was identified through manual searching of reference lists and citation searches. Twenty of these records met eligibility criteria following an initial screen of abstracts and titles, which then reduced to eight records following screening of the full text articles. See Appendix B for a list of the excluded articles and the reasons for exclusion. One article that met eligibility criteria included two empirical studies (Livheim et al., (a and b) 2015), therefore a total of nine studies are included in a narrative synthesis. See Figure 1 for an overview of the study selection process.

Figure 1.

Study selection process



Data extraction, synthesis and quality assessment

A data extraction sheet was developed in order to retrieve the relevant information from each included study. The data extracted included setting, total number of participants, participant demographics, study design, comparison conditions, mental health and/or wellbeing outcome measures, ACT process measures, data points, intervention format and length, therapist training, statistical analysis and outcomes. Relevant outcomes were any statistically significant reductions in mental health related symptoms or improvements in wellbeing, and whether the effects of the intervention were maintained at follow up. Due to the heterogeneity of the studies that met the inclusion criteria, a narrative synthesis of results was the most appropriate method for this review.

The quality of each included study was assessed using the 'Psychotherapy Outcome Study Methodology Rating Form' (POMRF) (Ost, 2008) (Appendix C). This is a 22-item scale that allows for assessment of a range of methodological elements including sample characteristics, research design, randomisation, the psychometric properties of outcome measures, assessment of statistical power, statistical analysis methods and bias in reporting of results. This scale was chosen as it includes elements specific to studies which evaluate psychological interventions, such as therapist training, therapist competence and therapeutic modality adherence. The POMRF has been used in a number of published systematic reviews of the ACT literature for adults and children (Kelson et al., 2019; Graham et al., 2016; Swain et al., 2013; Swain et al., 2015; Fang and Ding, 2020). Each item is rated on a 3-point scale from 0 (poor) to 2 (good). Overall POMRF scores range from 0 to 44, with higher overall scores indicative of greater methodological rigour. In terms of psychometric properties, the POMRF has been found to have good internal consistency (0.86) and interrater reliability within the range 0.50–1.00 with a mean of 0.75 (Ost, 2008).

For the purposes of this review, a number of amendments were made to ensure the POMRF was a relevant tool in assessing all included studies, and scores could be compared. Items two (severity and chronicity of the disorder) and four (reliability of the diagnosis in question) on the

POMRF were excluded from the quality assessment as four of the studies included in this review used a universal, non-targeted intervention, therefore participants did not have a mental health diagnosis. Additional items that referenced a mental health diagnosis were items three (representativeness of the sample) and five (specificity of outcome measures). For studies using a non-targeted intervention, representativeness of the sample was interpreted as whether the sample of study participants reflected the whole school population demographics, or whether this subset of participants shared a specific characteristic such as gender or level of academic ability. Additionally, specificity of outcome measures was interpreted as whether the outcome measures selected allowed for specific measurement of the outcome variables identified in the aims of the research. As a result of these amendments, the total POMRF scores ranged from 0-40. These amendments ensured that comparisons could be made across all studies included in the review.

The quality of each study was rated on the POMRF by the author and an independent second rater. Where there was discrepancy in the scores, both the author and second rater presented a rationale for their scoring in order to facilitate discussion and reach a consensus.

Results

Table 2 provides an overview of the nine included studies. The studies included a total of 1324 participants. Despite the searches having no limit on publication date, all studies were recent, with the earliest published in 2014 (Pahnke et al., 2014).

Table 2*Overview of Included Studies*

Study	N	Participant demographics (age and % female)	Country	Study design	Conditions	Mental health/wellbeing outcome measure(s)	ACT process measure(s)	Treatment length	Targeted/non-targeted intervention	Individual/Group intervention	Therapist
Burckhardt et al. (2017)	48	Age range: 14-16. 42% female	Australia	Feasibility study: Quasi-RCT (cluster randomisation)	ACT vs normal lessons	Flourishing Scale Depression Anxiety Stress Scale Short Form (DASS-21)	None	7 workshops and teacher-led exercises, once a week for 7 weeks. All workshops and teacher led classes were 25 minutes in duration.	Non-targeted	Group	Authors of paper who developed the ACT program, with support from teachers.
Fang and Ding (2020)	35	Mean age: 13.23 46% female	China	Between-groups design	ACT vs normal lessons	Utrecht work Engagement Scale-student (UWES-s), Positive Psychological Capital Questionnaire (PPQ)	Acceptance and Action Questionnaire II (AAQ- II)	Ten x 1-hour workshops across five weeks.	Targeted to students at risk of mental health problems	Group	Graduate student in psychology, who was trained by the first author and had studied ACT.
Van der Gucht et al. (2017)	586	Age range: 14–21. 53% female	Belgium	Randomized controlled trial.	ACT vs normal lessons	The Youth Self Report (YSR)	Avoidance and Fusion Questionnaire for	Four x 120 min sessions delivered over four weeks.	Non-targeted	Group	Two teachers per school, who attended

				Cluster randomisation.		World Health Organization Quality of Life questionnaire (WHOQoL-Bref)	Youth (AFQ-Y)				two days of ACT training by experienced ACT trainers.
Livheim et al. (2015) (a)	66	Age range: 12.5 and 17.75 years. 88% female	Australia	Pilot study: Between-groups	ACT vs. treatment as usual (12 weeks of monitoring from school counsellor)	The Reynolds Adolescent Depression Scale-2 (RADS-2) Strengths and Difficulties Questionnaire (SDQ)	Avoidance and Fusion Questionnaire for Youth (AFQ-Y8)	Eight-week group, duration unspecified.	Targeted to students experiencing mild to moderate depressive symptoms	Group	Registered psychologists and co-facilitated by clinical psychology graduate students or the school's own counsellor.
Livheim et al. (2015) (b)	32	Age range: 14-15 years. 72% females	Sweden	Pilot study: Randomised Controlled Trial	ACT vs. treatment as usual (individual support from school nurse)	The General Health Questionnaire (GHQ-12) Strengths and Difficulties Questionnaire (SDQ) Perceived Stress Scale Depression, Anxiety and Stress Scale (DASS 21)	Avoidance and Fusion Questionnaire for Youth (AFQ-Y17) Mindful Attention Awareness Scale (MAAS)	Six x 90 min sessions, delivered over six weeks.	Targeted to students experiencing mild to moderate depressive symptoms	Group	Two clinical psychology major students, with clinical training in CBT and four days ACT-training.

Satisfaction with Life Scale											
Pahnke et al. (2014)	28	Age range: 13-21 years Gender distribution not reported.	Sweden, (specialist school for ASD)	Pilot study, Quasi-RCT (cluster randomisation).	ACT vs. normal lessons	Stress Survey Schedule (teacher- and self-ratings) Strengths and Difficulties Questionnaires (SDQ; teacher- and self-ratings), Beck Youth Inventories (BYI)- anxiety, depression and anger subscales (self-ratings).	None	Six-week group comprising two x 40-min group sessions per week and 6- to 12-minutes of daily mindfulness exercises.	Targeted to students with high-functioning ASD	Group	Group sessions delivered by a graduate psychology student; daily exercises delivered by classroom teacher.
Puolakanaho et al. (2019)	249	Mean age: 15.27 years 49% females	Finland	Randomised Controlled Trial	ACT vs. normal lessons	Overall stress scale developed for study School stress scale adapted from the Health Behaviour in School-Aged Children (HBSC) study	None	Five-week online program, duration unspecified.	Non targeted	Individual	Coaching and support from 31 undergraduate psychology students, supervision by a licensed psychologist

Smith et al. (2020)	10	Age range: 13-15 years. 100% female	Australia	Pilot study, within-group design	N/A- within group design	Beck Youth Inventory (BYI-II)- anxiety and depression sub-scales	Avoidance and Fusion Questionnaire for Youth (AFQ-Y 17)	Six x 1-hour sessions, delivered over six weeks.	Targeted to students with mild-moderate depression and/or anxiety	Group	Two psychologists
Takahashi et al. (2020)	270	Age range: 14-15 years. Gender distribution not reported.	Japan	Between-groups design	ACT vs. normal lessons	Strengths and Difficulties Questionnaire (SDQ)	Value of Young Age scale – VOYAGE (Ishizu, Otsuki, Shimoda, & Nagata, 2016)	Six x bi-weekly group sessions, each lasting 50 minutes.	Non-targeted	Group	Clinical psychologist

Assessment of methodological quality

The results of the assessment of methodological quality revealed a high level of variability among included studies (see Table 3). Overall POMRF scores ranged from 13 to 21 out of a total of 40 points, with a mean score of 16.7 (SD = 2.69). As Ost (2008) did not include cut-off scores for the POMRF, the current review followed the protocol set out in Swain et al. (2013) and employed standard deviations (rounded to the nearest whole number) to enable the calculation of a POMRF rating to compare methodological quality between studies. Studies more than one SD below the mean POMRF score were rated “Below average” (range 0–14), those within one SD of the mean “average” (15–19), and those more than one SD above the mean “Above average” (20+). As demonstrated in Table 3, there were two studies in the below average range, five in the average range and two studies rating above average.

Table 3

POMRF score and rating

Study	POMRF score	POMRF rating
Takahashi et al. (2020)	13	Below average
Smith et al. (2020)	14	Below average
Livheim et al. (2015) (b)	15	Average
Pahnke et al. (2014)	15	Average
Fang and Ding (2020)	17	Average
Burckhardt et al. (2017)	17	Average
Puolakanaho et al. (2019)	18	Average
Livheim et al. (2015) (a)	20	Above average
Van der Gucht et al. (2017)	21	Above average

The following sections highlight common methodological strengths and weaknesses occurring across the nine included studies.

Participant demographics and representativeness of sample

The included studies were located across six different countries, with three of the studies based in Australia (Burckhardt et al., 2017; Livheim et al., (a) 2015; Smith et al., 2020). The majority of the schools included in the studies were state schools, with the exception of one study based in a private school (Burckhardt et al., 2017) and one study based in a specialist school for students with Autistic Spectrum Disorder (Pahnke et al., 2014). Aside from age and gender, the demographics of the students were sparsely reported. Gender representation was variable across the studies. Four of the studies reported a fairly even gender distribution of between 42-53% female participants (Burckhardt et al., 2017; Fang and Ding, 2020; Puolakanaho et al., 2019; Van der Gucht et al., 2017), two studies had over 70% female participants (Livheim et al. (a and b), 2015) and one study had only female participants (Smith et al., 2020). Two studies did not report the gender distribution of their participants (Pahnke et al., 2014; Takahashi et al., 2020).

Only three studies made reference to the socioeconomic catchment area of schools included in the study (Burckhardt et al., 2017; Fang and Ding, 2020; Livheim et al., (b) 2015). Burckhardt et al. (2017) stated that students in the school were “socio-economically advantaged compared with other students in the state of New South Wales and Australia, with 76% in the top quartile on a measure of socio-educational advantage” (p.3). Fang and Ding (2020) stated that the school was in a ‘poverty-stricken area’ with a high percentage of ‘left-behind children’. In China, “left-behind children” refers to children under 18 years old who remain at home while one or both parents migrate to other places for work without living together for at least six months (Cheng and Sun, 2015). The authors reference prior research which states that left-behind children and adolescents are more likely to experience school maladaptation and mental health problems (Liu, Fan, and Shen, 2007; Liu and Zhao, 2016). Livheim et al. (b, 2015) stated of their study setting that “the only notable differences

from other regular public high school are that 100% of the students at this school qualified academically to study at upper secondary school at the age of 15 compared to 89%, which is the national average rate, and parent's income level was twice as high as the Swedish family mean.

(p.13)"

Studies which used a targeted intervention were generally found to have recruited a representative sample of students with that particular disorder and were not found to have used excessively strict exclusion criteria as indicated on the POMRF. Common exclusion criteria were high risk students expressing suicidality or psychotic symptoms, and students already receiving ongoing psychological treatment.

Study design and randomisation

Five studies described themselves as 'pilot' or 'feasibility' research (Burckhardt et al., 2017; Livheim et al. (a and b), 2015; Pahnke et al., 2014; Smith et al., 2020). Three of the studies were randomised controlled trials with two using cluster randomisation of school classes (Livheim et al., (b) 2015; Van der Gucht et al., 2017) and the other using individual randomisation (Puolakanaho et al. 2019). Two studies described using a 'quasi-randomised design', both of which involved cluster randomisation of school classes (Pahnke et al., 2014; Burckhardt et al., 2017). It was not clear in either of these studies which element of the cluster randomisation was considered 'quasi'; the process of randomisation appeared to follow the same process as in other studies where cluster randomisation was also used and not referred to as 'quasi'. Three of the studies were classified in their reports as a between-group design due to a lack of participant randomisation or insufficient randomisation stringency to be classified as an RCT (Fang and Ding, 2020; Livheim et al., (a) 2015; Takahashi et al., 2020). Smith et al. (2020) used a within-group design, and therefore was the only study with no comparison group.

A control group was used in eight out of nine of the studies. Livheim et al., (a and b) (2015) used treatment as usual (TAU) comparison conditions with different treatment hours compared to

the ACT intervention. The treatment as usual conditions consisted of '12 weeks of monitoring' from the school counsellor (Livheim et al., (a) 2015) or 'individual support' from the school nurse (Livheim et al., (b) 2015). No further detail was provided regarding the type of monitoring and support that the students received, therefore it is not possible to ascertain the level of active treatment that was received or what approach was used. Six studies used a no treatment comparison group, where students attended their usual lessons. A treatment method that in previous research has been found effective for the disorder in question is the most stringent comparison condition to use and therefore this criterion was not fulfilled by any of the studies included in this review (Ost, 2008)

Outcome measures: specificity, reliability and validity

The primary outcome measures selected varied significantly across all studies. A variety of disorder-specific and global measures of mental health and wellbeing were used, depending on the aims of the study. All measures used were self-report, with the exceptions of the Stress Survey Schedule (Groden et al., 2001) and the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 2001) used in Pahnke et al., (2014) which contained a teacher rating as well as a student self-report rating. Due to the self-report nature of the majority of the outcome measures used by the included studies, statement eight on the POMRF ('Assessor training') was not relevant to most of the studies, resulting in a low mean score.

The reliability and validity of outcome measures was variable across studies, with several measures selected for use that had not been validated within a youth sample. The Depression Anxiety and Stress Scale (DASS-21) (Antony et al., 1998) was used in two studies (Burckhardt et al., 2017; Livheim et al. (b) 2015), despite concerns in the literature regarding the appropriateness of this scale for an adolescent population. Two studies have found the three-factor structure of the DASS-21 to be invalid when used with an adolescent population (Szabo, 2010; Moore et al., 2017). These authors have also noted that emotional differentiation is still developing in younger respondents and they may not be able to fully appreciate the differentiation between depression,

anxiety, and stress as reflected in the DASS-21 items. Furthermore, Szabó et al. (2010) contended that the DASS contained several expressions and words that might not be familiar to adolescents.

An 'overall stress measure' was used in Puolankanho et al. (2019), which had only been validated in an adult population (Elo et al., 2003). There is a distinct lack of detail regarding the structure of this measure, with no reference made to number of items or whether any subscales were included.

Three other scales used, the General Health Questionnaire (GHQ-12) (Gao et al., 2004), the Satisfaction with Life Scale (Diener et al., 1985), and the Flourishing Scale (Diener et al., 2010) were all originally developed for use with an adult population, however have since been validated in adolescent samples (Duan and Xie, 2016, Neto, 1993; Tait et al., 2003).

ACT process measures were used in six of the studies, with three exceptions (Burckhardt et al., 2017; Pahnke et al., 2014; Puolakanaho et al. 2019). There was higher consistency amongst the ACT process measures used than with the primary outcome measures, with four studies opting for the Avoidance and Fusion Questionnaire for Youth (AFQ-Y) (Greco et al. 2008). The AFQ-Y has good internal consistency (Cronbach's alpha = 0.90) and has good convergent validity against established measures of psychological distress, as well as ACT-specific measures (Greco et al. 2008).

The other ACT process measures used were a Chinese version of the Acceptance and Action Questionnaire II (AAQ- II) (Cao, Ji, and Zhu, 2013), the MAAS: Mindful Attention Awareness Scale (Carlson and Brown, 2005), and the Value of Young Age scale – VOYAGE (Ishizu et al., 2016). The AAQ-II has been validated within a Chinese adolescent sample (Cao et al., 2013), and the VOYAGE within a Japanese adolescent sample (Ishizu et al., 2016). It is unclear why the MAAS was used in Livheim et al. (b) (2015), rather than the adolescent version (MAAS-A) published by Brown et al. (2011) which has been validated in youth samples. The studies which included an ACT process measure only measured either one or two ACT process variables. Therefore, no studies achieved a comprehensive assessment of psychological flexibility.

A factor that impacted the validity and reliability of both primary and secondary outcome measures used in studies from non-English speaking countries was the limited availability of outcome measures validated within a youth sample in the local language. Van der Gucht et al., (2017) used a validated Dutch version of the Youth Self Report (Verhulst, 1997), however Livheim et al. (b) (2015) translated and back-translated existing outcome measures without conducting a subsequent validity or reliability analysis. COSMIN guidance (Mokkink et al., 2019) recommends that cognitive interviewing should be used post-translation to check comprehensibility of items. Three studies in non-English speaking samples did not make reference to whether outcome measures were translated for their study (Pahnke et al., 2014; Puolakanaho et al., 2019; Takahashi et al., 2020), therefore the validity and reliability of these measures is difficult to ascertain.

Intervention delivery: format, therapist competence and adherence

Nine of the included studies delivered the ACT intervention in a group or lecture format (range of group participants was 9-60), and one study used an online program accessed by individuals who received supplementary weekly online coaching (Puolakanaho et al., 2019). Burckhardt et al. (2017) delivered the intervention to the largest group of 60 students via lecture-style presentations for the psycho-educational elements, however experiential exercises were also used in smaller groups in between lectures.

All studies obtained a high score on the POMRF for 'manualised, replicable, specific treatment programs'. A number of the interventions used across studies were based on existing ACT programs or manuals. In Fang and Ding (2020), a translated version of the "ACT Made Simple" manual (Harris, 2009) was used to create a workshop based on the six modules of ACT. Van der Gucht et al., (2017) adapted a universal ACT prevention program (De Groot 2005; Livheim 2004) to the Flemish school context. All sessions included a psycho-educational part focused on theory and background, as well as a practical part with experiential exercises and homework assignments. In both Livheim et al. (2015) studies, the intervention used was the ACT Experiential Adolescent Group,

which is a manualized 8-week group program (Hayes & Rowse, 2008). This program uses experiential mediums, for example painting and role-play, to facilitate adolescents' experience of the six ACT processes. This program was translated to Swedish and tested on a non-clinical group ahead of the main study in Livheim et al. (b) (2015). In Pahnke et al. (2014), an ACT protocol (Hayes et al., 2003) was adapted to meet the needs of the target population of young people with an Autistic Spectrum Condition. Skills training based on the six components of ACT was provided with the aim of developing "participants' ability to cope with daily hassles and stressful situations, to break behavioural avoidance patterns, and to develop a broader behavioural repertoire" (p.4, Pahnke et al., 2014). Three studies (Puolakanaho et al., 2019, Takahashi et al., 2020; Smith et al., 2020) based their intervention on the book 'Get Out of Your Mind and Into Your Life For Teens' which introduces the six components of ACT via a new format created for an adolescent population named BOLD Warrior skills (Breathing deeply and slowing down, Observing, Listening to your values and Deciding on actions and doing them) (Bailey et al., 2012).

The majority of interventions covered all six core components of ACT, with two exceptions. Burckhardt et al. (2017) chose to exclude 'self-as context' from the intervention, as the developer found this component to be a difficult and confusing concept to transmit to adolescents. Takahashi et al. (2020) only made reference to four components of ACT in their paper (values, defusion, acceptance and committed action), however present moment exercises such as mindful breathing are included in the description of each session.

The duration of the interventions delivered across studies was between four and ten weeks with session length varying from 25 minutes to 120 minutes. The study which reported the lowest number of total intervention hours was Smith et al., 2020 where the intervention had a total duration of six hours. The highest number of total intervention hours was ten hours (Fang and Ding, 2020). Duration of the intervention was unspecified in two studies (Livheim et al., (a) 2015; Puolakanaho et al., 2019).

With regard to therapist training and competence, there was significant variability across the studies. Four studies used students as the primary therapist (Fang and Ding, 2020; Livheim et al. (b), 2015; Puolakanaho et al., 2019; Pahnke et al., 2014), one study trained teachers to deliver the intervention (Van der Gucht et al., 2017), two studies used psychologists (Takahashi et al., 2020; Livheim et al., (a) 2015) and one study used specialists in ACT (Burckhardt et al. (2017)). In Burckhardt et al. (2017) the therapist delivering the intervention was the main author of the paper. In those studies where the primary therapists had less experience in ACT, unspecified or variable levels of supervision were offered, ranging from none to session-by-session supervision (Puolakanaho et al. 2019).

Checks for adherence to the treatment protocol and therapist competence were sparse across the literature, with only four studies making any attempt to monitor adherence to treatment through use of supervision sessions (Fang and Ding, 2020; Van der Gucht et al., 2017; Livheim et al., 2015 (a); Pahnke et al., 2014). None of the studies used a tool to monitor fidelity to the treatment protocol directly during intervention sessions.

Power, data points and statistical reporting

Power calculations were reported and followed in only one of the studies (Puolakanaho et al., 2019), resulting in a mean POMRF rating for this methodological element of 0.1 out of 2. All studies collected outcome data pre- and post-intervention, however only three studies (Burckhardt et al., 2017; Van der Gucht et al., 2017; Pahnke et al., 2014) included a follow up data point. Of these three studies, only Van der Gucht et al. (2017) included a follow up at one year, which is the minimum criteria necessary to obtain the full score on the POMRF for this item.

Across the nine studies, statistical analysis methods were generally well-matched to the research design and the results comprehensively reported. Six of the studies (Burckhardt et al., 2017; Van der Gucht et al., 2017; Takahashi et al., 2020; Livheim et al., (a and b) 2015, Puolakanaho et al. 2019) used a linear mixed modelling approach to analysis which is recommended when there is

longitudinal data or clustered data of students within classes/schools (Verbeke and Molenberghs, 2000). A score of zero was allocated to Pahnke et al. (2014) on the POMRF as repeated measures analysis of variance (ANOVA) was used to analyse the main effects and interaction effects despite clustered data. Repeated measures ANOVA does not take into account the lack of independence often seen in clustered data, as this approach assumes spherical errors. The use of statistical methods with underlying assumptions that do not reflect the data can have significant consequences for the accuracy and replicability of scientific results (Oleson et al., 2019).

Outcomes

There is an inconclusive picture of the effectiveness of ACT-based interventions from studies in the current review, due to the variability in outcomes and low methodological quality of many studies. Outcome data is reported in tables 4 and 5, which includes reporting of statistical significance and effect sizes where presented in the studies at post-treatment and follow-up. All significance values reported are for a time by condition interaction, with the exception of Smith et al. (2020) where a within-subjects design was used.

Significance values and effect sizes are reported separately for mental health and wellbeing outcomes (Table 4) and process measure outcomes (Table 5). Values are reported only for outcomes related to mental health, wellbeing and quality of life, which for some studies means only specific subscales of more general measures are reported, for example the 'emotional symptoms' subscale of the Strengths and Difficulties Questionnaire (SDQ). Where possible, effect sizes are reported even for non-significant findings to investigate whether Type 2 errors were made due to studies being underpowered. The majority of studies reported Cohen's *d* effect sizes, which have been interpreted in this review according to Cohen's criteria (1988) of 0.2 as small, 0.5 as medium and over 0.8 as large. In Pahnke et al. (2014), effect sizes were expressed as partial eta squared and were interpreted using the guidelines proposed by Cohen (1988) of 0.01 as small, 0.06 as medium and 0.14 as large.

Table 4*Mental health and wellbeing outcomes*

Study	Outcome variable	Outcome measure	p	Effect sizes (ES)
Burckhardt et al. 2017	Anxiety	Depression, Anxiety and Stress Scale (DASS-21)	.19	BG pre-post=small ES (d=.28), BG pre-follow up= medium ES (d=.55)
	Depression	Depression, Anxiety and Stress Scale (DASS-21)	.79	Both BG pre-post (d=.31) ES and BG pre-follow up (d=.34) ES= small to medium
	Stress	Depression, Anxiety and Stress Scale (DASS-21)	.14	Both BG pre-post ES (d=.63) and BG pre-follow-up ES (d=.75) =medium to large
	Wellbeing	Flourishing Scale	.57	BG pre-post=small ES, BG pre-follow up= small to medium ES
Fang and Ding (2020)	Psychological capital	Positive Psychological Capital Questionnaire (PPQ)	.006*	BG pre-post ES=large (1.4)
Van der Gucht et al. (2017)	Anxiety	Youth Self Report	>0.5	ACT pre-post=small to medium ES (d=-0.33), ACT pre-follow up= small ES (d=-0.26) Control pre-post=small ES (d=-0.28, control pre-follow up= small ES (d=-0.16)
	Depression	Youth Self Report	>0.5	ACT pre-post=small to medium ES (d=-0.34), ACT pre-follow up= small ES (d=-0.25) Control pre-post=small ES (d=-0.27, control pre-follow up= small ES (d=-0.21)
	Psychological health	World Health Organization Quality of Life questionnaire (WHOQoL-Bref)- psychological health subscale	>0.5	ACT pre-post=small ES (d=0.16), ACT pre-follow up= small-medium ES (d=0.35) Control pre-post=small ES (d=0.08, control pre-follow up= small ES (d=0.09)
Livheim et al. (a) (2015)	Depression	Reynolds Adolescent Depression Scale (RADS-2)	0.008*	BG pre-post=large ES (d=0.86)
Livheim et al. (b) (2015)	Stress	Perceived Stress Scale	0.009*	BG pre-post=large ES (d=1.20)
	Life	Satisfaction with Life Scale	0.126	ES not reported

	satisfaction			
	Anxiety	Depression, Anxiety and Stress Scale (DASS-21)	0.057	BG pre-post=large ES (d=0.8)
	Depression	Depression, Anxiety and Stress Scale (DASS-21)	0.742	ES not reported
	Stress	Depression, Anxiety and Stress Scale (DASS-21)	0.971	ES not reported
	Mental health symptoms	General health Questionnaire (GHQ-12)	0.130	ES not reported
Pahnke et al. (2014)	Stress	Stress Survey Schedule (student ratings)	.044*	BG overall ES=large ($\eta^2=.11$)
	Stress	Stress Survey Schedule (teacher ratings)	.045*	BG overall ES=large ($\eta^2=.12$)
	Emotional problems	Strengths and Difficulties Questionnaire (SDQ)- Emotional Symptoms subscale	.13	BG overall ES=moderate-large ($\eta^2=.08$)
	Anxiety	Beck Youth Inventory (BYI)	.286	Not reported
	Depression	Beck Youth Inventory (BYI)	.083	BG overall ES=large ($\eta^2=.1$)
	Anger	Beck Youth Inventory (BYI)	.023*	BG overall ES=large ($\eta^2=.14$)
	BYI total	Beck Youth Inventory (BYI)	.032*	BG overall ES=large ($\eta^2=.12$)
Puolakanaho et al. (2019)	Stress	Stress measure designed for study	0.037* (per protocol analysis)	BG pre-post ES=small (d=0.22)
	Stress	Stress measure designed for study	>.05 (Intention-to-treat analysis)	ES not reported
Smith et al. (2020)	Anxiety	Beck Youth Inventory (BYI)	.007**	WG pre-post ES=medium to large (d=0.74)
	Depression	Beck Youth Inventory (BYI)	.277	WG pre-post ES=small to medium (d=0.31)
Takahashi et al. (2020)	Emotional problems	Strengths and Difficulties Questionnaire (SDQ)- Emotional Symptoms subscale	1.00	ES not reported

Note: *statistically significant group by time interaction ($p<.05$), **statistically significant effect of time (within-group design), BG=between-groups, WG=within-group, ES=effect size

Table 5*Process measure outcomes*

Study	Outcome variable	Outcome measure	p	Effect sizes
Fang and Ding (2020)	Psychological Inflexibility	Acceptance and Action Questionnaire (AAQ-II)	.47	BG pre-post ES= small-medium (d=0.39)
Van der Gucht (2017)	Psychological Inflexibility	Avoidance and Fusion Questionnaire (AFQ-Y)	NS	BG pre-post (d=-0.02) and pre-follow up (d=0.15) ES= small
Livheim et al., (a)(2015)	Psychological Inflexibility	Avoidance and Fusion Questionnaire (AFQ-Y)	.021*	BG pre-post ES=medium to large (0.73)
Livheim et al., (b) (2015)	Psychological Inflexibility	Avoidance and Fusion Questionnaire (AFQ-Y)	0.56	ES not reported
	Mindful awareness	Mindful Attention Awareness Scale (MAAS)	.067	BG pre-post ES=medium to large (d=0.75)
Smith et al. (2020)	Psychological Inflexibility	Avoidance and Fusion Questionnaire (AFQ-Y)	.022**	WG pre-post ES=small to medium (d=0.38)
Takahashi et al. (2020)	Clarification of values and commitment	Value of Young Age Scale (VOYAGE)	1.00	ES not reported
	Continuation of avoidance	Value of Young Age Scale (VOYAGE)	.036*	ES not reported

*Note: *statistically significant group by time interaction ($p < .05$), **statistically significant effect of time (within-group design), BG=between-groups, WG=within-group, ES=effect size*

Depression. Depression was measured in six of the studies (Burckhardt et al., 2017; Van der Gucht et al., 2017; Livheim et al. (a and b) 2015; Smith et al., 2020; Pahnke et al., 2014). The only statistically significant score was in Livheim et al. (a) (2015), which reported a large effect size. This study also scored 'above average' with regard to methodological rigour in comparison to the other studies.

Anxiety. Anxiety was measured in five studies (Burckhardt et al., 2017; Van der Gucht et al., 2017; Livheim et al. (b) 2015; Smith et al., 2020; Pahnke et al., 2014). The only statistically significant score was in Smith et al., (2020), with a medium to large effect size. In Livheim et al. (b) (2015), the outcome was marginally significant with a large effect size. However, both of these studies scored as having relatively poor methodological rigour in comparison to the other studies. Smith et al., (2020) was the only study in this review with no comparison condition, therefore caution must be used in interpreting these results. A methodological review of studies including psychological treatments showed that the 'pre-post-test' design consistently overestimates effectiveness by an average of 61% compared to studies with a control group (Wilson and Lipsey, 2001). Several confounding variables could be the cause for this including regression to the mean, effects of testing and increases in the maturity and experience of participants over time (Marsden and Torgerson, 2012).

Stress. Stress was measured in four of the studies (Burckhardt et al., 2017; Livheim et al. (b) 2015; Pahnke et al., 2014; Puolakanaho et al., 2019). In Livheim et al. (b) (2015) a statistically significant outcome on the Perceived Stress Scale (PSS) with a large effect size was found. However, this study also measured stress through use of the Depression, Anxiety and Stress Scale (DASS-21) and did not find a significant result. It is important to note that the DASS-21 has not been validated for use in youth samples, and several studies have reported that the three-factor structure of the DASS-21 is invalid when used with an adolescent population (Szabo, 2010; Moore et al., 2015). Livheim et al., (b) (2015) has relatively low overall methodological rigour in comparison to the other

studies, therefore any significant results should be interpreted with caution regardless of the outcome measures used.

A significant outcome for stress was also found in Pahnke et al. (2014), with large effect sizes across both self-ratings and teacher-ratings. This study was rated as having 'average' methodological quality in relation to the other studies included in the review. Puolakanaho et al. (2019) found a significant effect for stress with a low effect size in the 'per-protocol analysis' which included only those participants who completed treatment, but not in the intention-to-treat analysis which included data from all participants.

Overall measures of mental health. Several overall measures of mental health were included across four studies with outcomes termed 'emotional problems', 'psychological health' and 'mental health symptoms' dependent on the measure used (Van der Gucht et al., 2017; Livheim et al., (b) 2015; Pahnke et al., 2014; Takahashi et al., 2020). These measures were all demonstrated to have good reliability and validity within youth samples. All findings were non-significant with low effect sizes, with the exception of Pahnke et al. (2014) where a non-significant effect yet large effect size for 'emotional problems' was found.

Other outcomes. There were several other outcomes measured less frequently across the nine studies. Burckhardt et al. (2017) measured wellbeing, and findings were non-significant and the effect size small. Psychological capital was measured in Fang and Ding (2020) and they found a significant outcome with a large effect size. Psychological capital has been defined as an individual's positive psychological state of development, and is characterized by self-efficacy, optimism, perseverance towards goals and resilience (Luthans et al., 2006). Anger was measured in Pahnke et al. (2014), and a significant outcome was found, with a large effect size.

Follow up. Three studies included a follow up data point (Burckhardt et al., 2017; Pahnke et al., 2014; Van der Gucht et al., 2017). Only Pahnke et al. (2014) found significant results at follow up

for both stress and anger. In Burckhardt et al. (2017), there were medium to large effect sizes at follow up for both stress and anxiety despite a non-significant finding.

ACT process measures. Across the five studies that used measures of psychological flexibility, three studies found significant results (Livheim et al., (a) 2015; Smith et al., 2020; Takahashi et al., 2020). Two of these studies (Livheim et al., (a) 2015; Smith et al., 2020) used the same outcome measure, the Avoidance and Fusion Questionnaire for Youth (AFQ-Y). In Livheim et al. (a) (2015), a large effect size was found, however in Smith et al. (2020) a small to medium effect size was found. No control group was used in Smith et al. (2020), and this study was deemed to have below average methodological quality on the POMRF. Takahashi et al. (2020) found a significant result for the 'continuation of avoidance' subscale on the VOYAGE, but not the 'clarification of value and commitment' subscale. No effect sizes were presented for this study, therefore it is not possible to quantify the size of this effect.

Universal vs targeted interventions. One out of the six studies that demonstrated significant results used a universal intervention (Puolakanaho et al., 2019). In this study, a small effect size for stress was found. Across the five targeted interventions that demonstrated significant results, effect sizes were medium to large (Fang and Ding, 2020; Livheim et al. (a and b), 2015; Smith et al., 2020; Pahnke et al., 2014). The average score for methodological quality for universal interventions was slightly higher at 17.25 (range 13-21), compared to the average score for targeted interventions which was 16.2 (range 14-20).

Impact of sample size. The low sample size reported across the majority of the studies in this review is likely to have had a significant impact upon statistical power. In two of the studies (Burckhardt et al., 2017; Pahnke et al., 2014), large effect sizes were found despite no statistically significant results. These studies both had a low sample size of 28 and 48 participants, respectively, suggesting that more highly powered research may be needed to obtain significance.

Discussion

The aim of the current systematic review was to evaluate the methodological quality and examine the effectiveness of all peer-reviewed literature on ACT interventions based in secondary schools. Nine studies adapted ACT protocols for use in school settings across a range of universal interventions and targeted interventions for mild to moderate mental health difficulties.

The existing evidence for the effectiveness of ACT-based interventions delivered in school settings on improving mental health and wellbeing is mixed. This review found statistically significant results across six studies for outcomes of depression (Livheim et al. (A), 2015), psychological capital (Fang and Ding, 2020), stress (Livheim et al.(b), 2015; Pahnke et al., 2014; Puolakanaho et al., 2019) and anxiety (Smith et al., 2020). Three studies found no significant findings across any of the outcomes measured (Burckhardt et al., 2017; Van der Gucht et al., 2017; Takahashi et al., 2020).

With regard to program type, studies that used a targeted intervention performed significantly better than studies that used a universal intervention. This finding aligns with previous research that demonstrates higher levels of effectiveness for targeted compared to universal school-based interventions (Corrieri et al., 2014; Werner-Seidler et al., 2017; Feiss et al., 2019). This may reflect a potential difficulty in using outcome measures based on mental health symptoms to quantify the effectiveness of universal interventions. Many students accessing this intervention may not be presenting with any current difficulties with their mental health and wellbeing and therefore receive preventative as opposed to treatment effects from the intervention. It may be that future studies examining the effects of universal interventions may benefit from using outcome measures that capture aspects of general wellbeing such as resilience.

It is clear from the relatively recent publication dates across all studies that the literature on ACT interventions in schools is in its infancy, with five of the included studies identified as 'pilot' or 'feasibility' research. Studies were heterogeneous with regard to design and outcomes measured; therefore, it is difficult to draw firm conclusions regarding the efficacy of ACT or the moderating

influence of program type, program format and delivery. Additionally, as may be expected in a newly developing research area, many methodological limitations were identified. The most common methodological weaknesses across studies were a low sample size, lack of a follow up data point, lack of checks for treatment adherence and therapist competence, and lack of comparison with another active treatment. The average POMRF rating in the current study is 16.7 which is significantly lower than in the most recent meta-analysis on the efficacy of ACT for children by Fang and Ding (2020) which stated a mean POMRF score of 22.85. This suggests that the methodological quality of school-based studies with ACT currently lags behind the main ACT literature for young people.

The study which received the highest score for methodological quality in this review found no significant results in any measured variables (Van der Gucht et al. 2017). Several reasons for the lack of significant findings were presented by the authors. Van der Gucht et al. (2017) hypothesised that use of a brief treatment program of four sessions was as a potential reason for the lack of significant outcomes. Four sessions were the fewest number of intervention sessions used across all the nine studies. Additionally, use of teachers as the ACT facilitators was suggested as potentially affecting outcomes, with the authors concluding that teachers may need to be supported by a mental health professional. This conclusion is supported by similar research conducted by Wahl et al. (2014), which compared a depression prevention program delivered by either teachers or psychologists and found only the program facilitated by psychologists to have any significant impact on outcomes. Not all of the studies in this review used psychologists as facilitators, however of interest is that Van der Gucht et al., (2017) was the only study that did not use facilitators with an academic background in psychology or prior mental health training.

It is clear that more stringent checks on therapist competence and adherence are needed across all studies included in this review. No fidelity checks were included across any of the nine studies, impacting upon the internal validity of the studies. Conclusive statements about treatment

effectiveness cannot be drawn without consideration of treatment fidelity (Borrelli, 2011; Murphy and Gutman, 2012). Tools such as the recently developed ACT fidelity measure (ACT-FM) (O'Neill et al., 2019) may be a valuable inclusion in further studies.

Limitations of the current review

In the current systematic review, only peer review articles were included for quality purposes, however in doing so the review failed to account for unpublished 'grey' literature. As this is an emerging and expanding area, reviews of the grey literature may be helpful. Additionally, concerns have been raised around publication bias leading to subsequent inflated effect sizes, therefore examinations of 'grey literature' may help appease these concerns (Strauss et al., 2014).

The POMRF rating scale (Öst, 2008) was selected to assess methodological quality across studies, due to its inclusion of elements specific to the evaluation of psychological interventions and its use in a number of published systematic reviews of the ACT literature (Kelson et al., 2019; Graham et al., 2016; Swain et al., 2013; Swain et al., 2015; Fang and Ding, 2020). However, this measure focuses primarily on clinically diagnosable difficulties, which was not applicable to studies with a preventative focus, and is not in keeping with the transdiagnostic approach used in ACT. Additionally, due to the self-report nature of the majority of the outcome measures used by the included studies, statement eight on the POMRF ('assessor training') was not relevant to most of the studies, resulting in a low mean score on this item. This is a weakness of using the POMRF as a quality assessment tool, as it is biased towards studies where the outcome measures are administered by trained professionals. There are also no standardised criteria for interpreting POMRF scores, therefore comparisons of the quality of studies to the wider literature is difficult.

Conclusions

Despite methodological weaknesses across studies, there is some evidence to show support for the use of ACT as a school-based intervention. However, more highly powered studies are

needed in order to draw any firm conclusions regarding the effectiveness of interventions. More rigorous methodological processes in future research will aid understanding of effects; for example, the extent to which intervention format, therapist competence or adherence to the protocol may be impacting results. As is often the case with emerging interventional approaches, methodological quality can suffer due to lack of funding and resources, as was noted in the earlier days of CBT research (Gaudiano, 2009). However, in spite of these issues, there is a sense of growing momentum in the adolescent ACT literature and the reviewed studies highlight the recent efforts of the ACT community to address the need for evidence-based school interventions, in keeping with UK government guidance 'Transforming Children and Young People's Mental Health Provision' that stipulates a need for more evidence-based approaches to support mental health in schools (Department for Education, 2017).

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Paper 2: Empirical paper

**The Efficacy of a Universal School-Based Acceptance and Commitment Therapy intervention
(InTER-ACT) for Student Mental Health and Wellbeing: A Cluster-Randomised Controlled Trial**

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This paper was written in accordance with the guidelines for authors for the Journal of Contextual Behavioural Science (Appendix A). To enable sufficient coverage of key methodology and findings, the word count adhered to is Cardiff University.

Abstract

This study aimed to evaluate the efficacy of a brief universal Acceptance and Commitment Therapy (ACT) intervention delivered by teachers and school counsellors in secondary schools on students' mental health and wellbeing.

This study is a cluster-randomised controlled trial involving students from six UK schools (n=359, age 12-13 years). One class from each school received a three-session group intervention based on ACT (n=182), delivered as part of the school curriculum by a teacher and a school counsellor dyad. One class from each school was allocated to the control condition and attended their normal lessons (n=177). All students from the randomly allocated classes were eligible to take part in the trial. All students completed outcome measures at pre-intervention, post-intervention and a six-week follow-up measuring the primary outcome of wellbeing, and secondary outcomes of anxiety, depression, stress and mindfulness. A total of 157 participants' data was analysed for the intervention group, and 158 participants' data for the control group.

A multilevel modelling analysis of interaction effects found a significant effect of the intervention on stress. No significant effects of the intervention were found for outcomes of wellbeing, anxiety, depression or mindfulness.

This research was conducted during the context of the Covid-19 pandemic which led to several methodological limitations and the introduction of potential confounding factors for the mental health and wellbeing of young people. Despite these limitations, this study generates several areas of focus for future research and provides a comprehensive template for a larger future trial.

This study is listed on the ISRCTN registry with study ID ISRCTN15458396.

Keywords: 'Acceptance and Commitment Therapy', 'randomised controlled trial', 'school', 'mental health', 'wellbeing'

The Efficacy of a Universal School-Based Acceptance and Commitment Therapy intervention (InTER-ACT) for Student Mental Health and Wellbeing: A Cluster-Randomised Controlled Trial

Adolescence is a period where multiple physical, emotional and social changes can increase vulnerability to poor mental health (Eyre and Thapar, 2014; Kessler et al., 2005). Globally, it has been estimated that 10-20% of adolescents experience mental health problems (Kessler, 2007) and statistics demonstrate that mental health problems in young people appear to be increasing consistently over time (Pitchforth et al., 2019). Poor mental health in childhood and adolescence has been recognised as a significant predictor for lifetime mental health problems, with 50% of adults with mental health problems first having experienced them prior to age 15 (Kessler et al., 2005). Research has demonstrated that mental health problems can have a wide-reaching impact upon a young person's life, increasing their vulnerability to social exclusion, educational difficulties, risk-taking behaviours and physical health problems (WHO, 2020).

Understanding and preventing mental health difficulties in young people is an increasing public health priority, with promotion of wellbeing at its core. Research suggests that mental wellbeing is more than just the absence of mental health problems, it accounts for the presence of positive emotion (e.g., contentment, happiness), satisfaction with life, fulfilment and positive functioning (Diener et al, 1997; Diener, 2000). Several studies have recognised the importance of mental wellbeing for resilience, quality of life, cognitive functioning, physical health and positive social relationships (Davydov, 2010; Huppert, 2005; Seligman, 2004). A UK based survey, The Good Childhood Report 2020, explored changes in the wellbeing of young people over time (The Children's Society, 2021). This report made comparisons of the wellbeing of young people between 2009/10 and 2017/18 and found a significant decrease in happiness with life as a whole in young people aged 10-15 years. This suggests that young people today experience not only increased rates of mental health problems, but also lower levels of wellbeing.

As many specialist mental health services are under increased pressure to meet this growing need, there has been a shifting of responsibility to the school environment. The UK Government's Green Paper, 'Transforming Children and Young People's Mental Health Provision' (2017), focuses on earlier intervention and prevention for mental health, and highlights the role schools and colleges play in supporting the mental health of young people. In Wales, the Welsh Government's 2021 framework on embedding a whole school approach to mental health and emotional wellbeing has made it a mandatory requirement to support the emotional wellbeing of students in schools. This framework advocates for preventative work and the importance of "teaching young people to understand their own emotions and how they can adapt and cope with the challenges they will face" (p.17). This guidance stipulates the need for universal provision for mental health in schools to support students to understand their own well-being, build resilience and develop healthy coping mechanisms.

Universal school-based interventions that provide non-targeted support have been the subject of a number of recent systematic reviews and meta-analyses, with Cognitive Behavioural Therapy (CBT) used as the predominant approach. There have been mixed findings across studies with outcomes ranging from weak evidence (Mackenzie and Williams, 2018; Caldwell et al., 2019) to significant outcomes across a range of mental health measures (Fenwick -Smith et al., 2018; Sutan et al., 2018; Dray et al., 2017). These findings suggests that more research needs to be conducted in schools, using a range of therapeutic approaches.

Transdiagnostic approaches such as Acceptance and Commitment Therapy (ACT) have been more recently introduced into the school setting and appear to be suitable for universal interventions due to their ability to target shared risk factors amongst common mental health disorders (Gillard et al., 2018). ACT is a 'third-wave' therapy that considers mental health difficulties to share a common underlying element of psychological inflexibility. In contrast, psychological flexibility, the target of intervention in ACT, is defined as "the ability to contact the present moment

more fully as a conscious human being and to change, or persist in, behaviour when doing so serves valued ends” (p. 5, Hayes et al., 2004). ACT is based on Relational Frame Theory, and its protocols target the processes of language that are hypothesised to be involved in mental distress. The six core targets for treatment form the ACT ‘hexaflex’: cognitive defusion, where thoughts are seen as mental events rather than facts; acceptance of uncomfortable thoughts and feelings rather than avoiding or suppressing them; present moment awareness; ‘self-as-context’, where a person is able to detach from harmful narratives or evaluations about themselves; identification of personal values; and commitment to taking action in line with identified values (Hayes et al., 2006). ACT uses acceptance and mindfulness strategies, together with commitment and behaviour change strategies, to increase psychological flexibility.

There are several components of ACT which may increase its suitability for use with young people, and thus, their responsiveness to this approach. ACT makes significant use of metaphor and experiential exercises to explain key ideas, which aligns with the tendency of young people to think imaginatively and creatively. Using creative techniques to introduce abstract concepts such as thought fusion in a more concrete way also complements the cognitive development of young people as they begin to acquire higher cognitive skills (Dumontheil, 2014).

It could also be argued that the process of how difficult thoughts are addressed in ACT is less cognitively demanding for young people than the process used in CBT. Standard CBT promotes evaluation of thoughts and change in their content or frequency through cognitive restructuring, whereas ACT promotes a different relationship with thoughts, fostering an ability to hold thoughts in awareness rather than try to change or reduce them, through a focus on present-moment awareness (Deacon et al., 2011). Cognitive abilities especially have been considered integral for successful engagement in CBT and require young people to have developed cognitive abilities of metacognition (Grave and Blissett, 2004) and scientific reasoning (the process of using evidence to examine theories and hypotheses, and drawing conclusions based on this examination) (Sandberg and Spritz, 2010). Learning thought defusion and mindfulness skills in ACT as opposed to

restructuring specific unhelpful thoughts in CBT may also allow for more generalisability of skills to other situations. This may be especially helpful when young people are receiving this intervention in a group context and therefore do not always have opportunities to process their own difficult thoughts during sessions.

Another key component of ACT that may feel especially relevant to young people is the focus on identification of values and commitment to valued action. Adolescence is a time where young people are facing many challenges including developing relationships, negotiating their independence, and developing their self-identity (Casey et al., 2008). Supporting young people to consider their core values and what matters most can help them to navigate these challenges by providing a sense of direction. In ACT, the distinction is made between values and goals, which may be a helpful perspective for young people who are already feeling under pressure to perform to expected goals in educational settings.

A further component of ACT that may increase engagement amongst young people is the focus on developing mindfulness skills. Mindfulness-based exercises are often used in other therapeutic approaches such as CBT, however this is a core component of ACT and a skill that is given significant attention in therapy (Hayes et al., 2006). Research indicates there are a range of benefits of mindfulness-based programs for young people, including the reduction of depression and anxiety symptoms, increased resilience and empathy, and increased attentional capacity of students (Zoogman et al. 2014; Zenner et al. 2014). Mindfulness is increasingly taught in schools to students, and more frequently incorporated into the weekly curriculum by teaching staff (Zenner et al., 2014). Therefore, using an ACT approach may build upon skills already taught in schools that feel familiar to young people.

Two meta-analyses have examined the use of ACT with young people and concluded that there is emerging evidence to suggest ACT is effective in the treatment of young people across a multitude of presenting problems (Swain et al., 2015; Fang and Ding, 2020). Due to the growing evidence base for the use of ACT with young people, a number of recent studies have evaluated the

efficacy of ACT interventions in secondary school settings. These studies demonstrate initial evidence to show support for the use of ACT in a school setting with significant results found across outcomes including psychological capital (characterized by self-efficacy, optimism, perseverance towards goals and resilience) (Fang and Ding, 2020), depression (Livheim et al. (a), 2015), anxiety (Smith et al., 2020) and stress (Livheim et al., (b) 2015; Puolakanaho et al., 2019; Pahnke et al., 2014). However, due to methodological weaknesses across the existing studies, it is clear that further research is needed in order to draw any firm conclusions regarding the effectiveness of ACT in school settings. Of note, there is a lack of research into school-based ACT interventions in a UK context.

Due to the infancy of using ACT interventions in a school context, a level of uncertainty exists regarding the optimal format and delivery of the intervention. Previous research using a two-session web-based ACT intervention in a sample of college-students found significant improvements on symptoms of depression for the ACT intervention group relative to a waitlist control group (Levin et al. 2014). This suggests that brief ACT interventions can be effective in educational settings. However, Van der Gucht et al. (2017) used a brief intervention of four-sessions and found no significant results for outcomes of internalising and externalising problems, quality of life and psychological flexibility. The researchers concluded that the ACT intervention was potentially ineffective due to the lack of a trained mental health professional to deliver the program. In the study, teachers were used to deliver the intervention to their classes, following a training program. This study made recommendations for joint facilitation of future programmes by a mental health professional in close collaboration with a schoolteacher who has detailed knowledge of the students' background. This recommendation is supported by research conducted by Vostanis et al. (2013) who conducted a large-scale survey of universal mental health programs in primary and secondary schools in the UK, and found that gaps in teacher training and support were two of the most significant barriers to successful implementation of interventions.

The current study sought to utilise the resources created by the developments in the provision of school counsellors in the UK. There is now a statutory requirement that a school counsellor must be accessible to all secondary schools in Wales and Northern Ireland due to the increasing recognition of the valuable role school counsellors play in promoting, protecting and improving young people's mental health and wellbeing (Department for Education, 2016). Research indicates that school-based counselling is perceived by young people as a non-stigmatising, accessible and effective method of early intervention (Cooper, 2009).

This study follows on from a previous feasibility trial which aimed to ascertain the feasibility and acceptability of a newly developed brief school-based ACT intervention, 'InTER-ACT' (In School Training in Emotional Resilience with ACT), run by clinical psychologists with specialist training in ACT (Harris, 2019). The study trialled a brief three-session ACT workshop alongside a parallel CBT workshop and a control condition where students attended their Personal, Social and Health Education (PSHE) lessons as normal. A focus group of students provided feedback that they found the ACT workshops less theoretical in nature than the CBT workshops, and therefore easier to understand and more engaging. Additionally, students felt that the ACT workshops were more applicable for a universal group intervention than the CBT workshops, which they felt were only relevant for students experiencing difficulties with their mental health. Comparison of mean scores at an eight-week follow up demonstrated that students in the ACT group had the most favourable scores compared to the CBT and control groups, in terms of the highest levels of mindfulness, psychological flexibility, well-being and quality of life, and the lowest levels of avoidance behaviours and thought fusion. In summary, this study concluded that the ACT workshop was found to be more acceptable to the young people than a CBT workshop, and was found to be feasible to run in a school setting.

Aims of the current study

This study aimed to evaluate the efficacy of a brief universal ACT intervention delivered by teachers and school counsellors in secondary schools on students' self-reported wellbeing, anxiety, depression, stress and levels of mindfulness (one of the sub-processes of psychological flexibility). It was hypothesised that students who received the ACT intervention would demonstrate improvements in their mental health and wellbeing, relative to a control group of students receiving their normal lessons.

This study was conducted as a part of a larger trial which involved assessment of levels of fidelity to an ACT ethos by the intervention facilitators and their adherence to the intervention protocol, as well as a qualitative study looking at the facilitators' experiences of learning and delivering a new approach¹.

¹ These studies were completed by two trainee clinical psychologists as part of their Doctorate in Clinical Psychology, and therefore the results are / will be reported elsewhere.

Method

Ethical approval

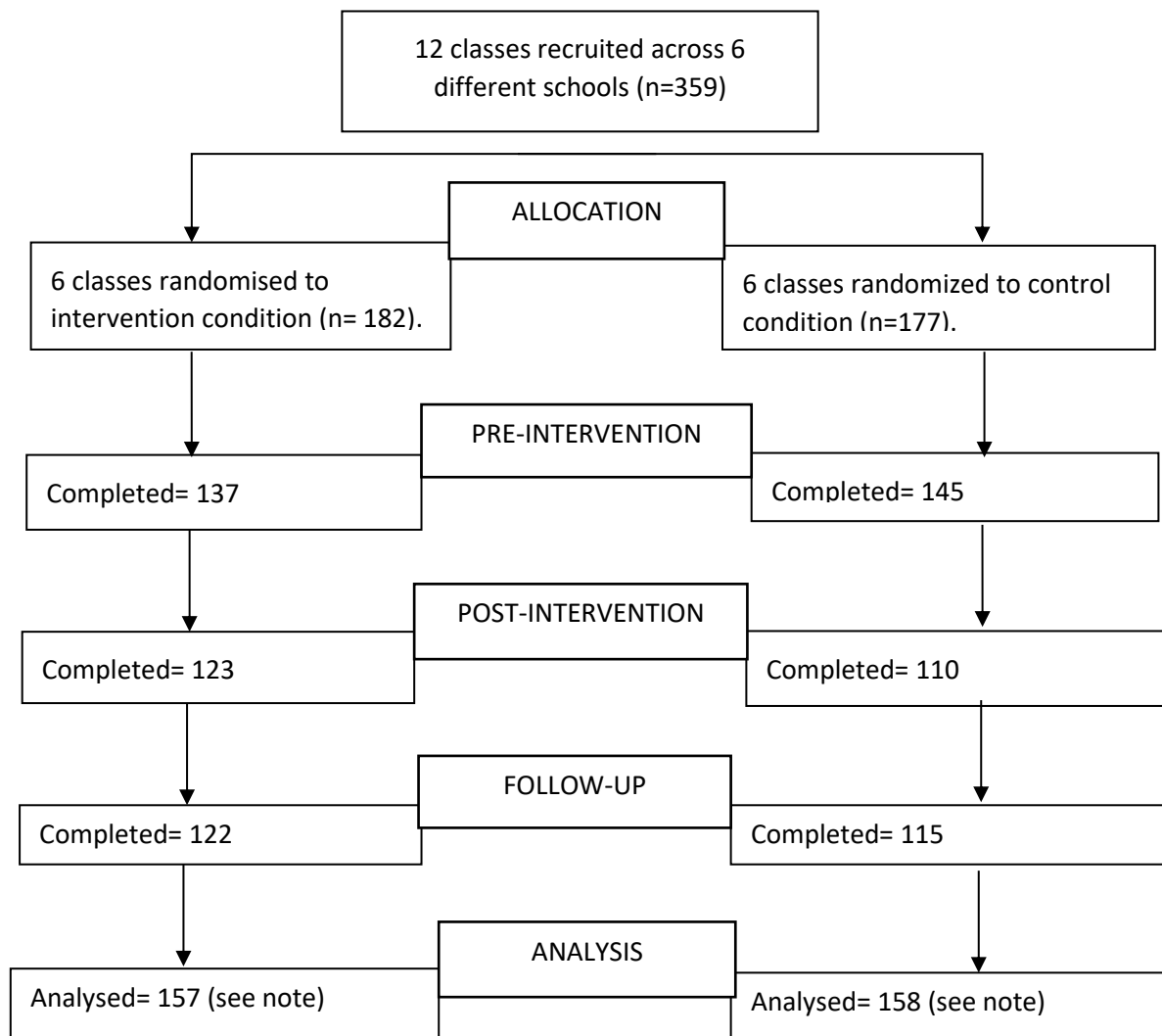
This study was approved by the Cardiff University School of Psychology Research Ethics Committee (Appendix D).

Participants and recruitment

Participants were 359 adolescents recruited from year eight classes across six secondary schools. The intervention used in this study was non-targeted, therefore all year eight students in the randomly allocated classes were eligible to participate in the study. Figure 1 presents the participant flow from recruitment through to follow up, indicating total numbers of participants that completed outcome measures at each stage of the study. In the UK school system, students in year eight are aged 12-13 years. Schools were identified using opportunistic sampling, and a gatekeeping letter sent to the headteacher or pastoral lead (Appendix E). Of the schools approached, 30% agreed to take part. All secondary schools were state-funded schools. One of the participating schools was a grammar school, where students are selected on the basis of academic achievement. Five of the participating schools were based in England, and one in Wales. Of the students participating in the study, 48% were female.

Figure 1.

Flow chart of participants' progression through the study.



Note: Total N analysed is larger than totals for each timepoint as this study used an intention-to-treat analysis where subjects who completed outcomes at any timepoint were included in the analysis.

Consent arrangements

Parents of students were given the opportunity to opt-out of their child participating in the evaluation element of the research (Appendix F), which was completion of outcome measures at

three timepoints. All students in the identified classes who received parental consent were invited to participate in the study and were provided with an information sheet (Appendix G) and consent form (Appendix H). Regardless of participation in the evaluation element of the study, all students in the intervention condition attended the ACT workshops as this was part of their standard curriculum. All students who completed outcome measures were provided with a full debrief at the end of the study (Appendix I).

Study design and randomisation

This study was a cluster-randomised controlled trial. A list of year eight classes was provided to the researcher by each of the schools, and from this list cluster-randomisation was used to allocate one class to the intervention condition and one class to the control condition. An online random number generator was used for allocation.

Procedure

The intervention class received an ACT programme, comprising three separate workshops, delivered across a maximum of a five-week period. The facilitators were instructed to deliver no more than one workshop per week, to ensure the workshops were spaced across time. Each ACT workshop was one hour in duration. The control class attended their usual lessons. Questionnaire data collected on intervention completion rates showed 70% of students attended all three workshops, 14% of students attended two workshops, 5% attended one workshop, and 11% of students stated they were unsure how many of the workshops they had attended.

ACT intervention

A universal, non-targeted ACT intervention program, 'InTER-ACT' (In School Training In Emotional Resilience with ACT), developed by two Clinical Psychologists, Dr Victoria Samuel and Dr Chloe Constable, was used (Samuel, Constable and Channon, in publication). The InTER-ACT intervention was initially developed based upon the DNA-V model of teaching ACT to young people

(Hayes and Ciarrochi, 2015) combined with the developers' extensive clinical experience of working with children and young people using ACT. However, following an initial pilot, the developers decided to remove the DNA-V model as it did not align with their preferred method of explaining ACT to children and young people, and it was felt that the terminology caused some confusion. This led to a redevelopment of the InTER-ACT programme, which was based on the developers experience of what worked well in the pilot workshops along with refinements based on feedback from the young people and teachers in the acceptability and feasibility trial (Harris, 2019). The final programme consisted of bespoke content, with no DNA-V concepts remaining. The final programme also integrated commissioned illustrations, which were based on feedback from young people regarding the need for more child friendly visuals. For further information on the development of the programme please refer to the paper 'Developing a Brief Universal Acceptance and Commitment Therapy (ACT) Programme for Secondary School Pupils: The InTER-ACT Programme, Pastoral Care in Education' (Samuel, Constable, & Channon, 2021).

Each 'InTER-ACT' workshop consisted of a psycho-educational element, experiential exercises and opportunities for group discussion and interaction. The verbal delivery of the workshops was supported by accompanying PowerPoint slides containing key messages, images and videos developed for InTER-ACT. A script accompanied each slide to manualise the protocol and ensure consistency and increase confidence in delivery. The first session, 'Thoughts Are Just Thoughts', focused on psycho-education on the evolution of difficult thoughts and feelings and experiential exercises to introduce acceptance and thought defusion. Session two, 'Pause, Observe, Describe', introduced skills to develop present moment awareness and self-as context skills. The final session, 'Taking Steps Towards What Matters', focused on identifying personal values and taking committed action, as well as summarising the content learnt over the three sessions.

Recruitment and training of intervention facilitators

The ACT workshops were jointly delivered by one teacher and one school counsellor from each secondary school. This dyad remained the same across all three workshops.

The inclusion criteria for participating teachers were that they must hold a teaching qualification and have an interest in supporting students' mental health and wellbeing. Teachers recruited to the study held a variety of roles, including subject teachers, special educational needs teachers and an assistant headteacher. In one school, there was no school counsellor available to participate in the project, therefore an additional teacher with counselling experience with young people was recruited to fulfil this role.

The identified teacher and school counsellor dyad attended a two-day training program facilitated by the researchers to equip them to deliver the ACT workshops in their schools. Due to Covid-19 restrictions, this training was delivered remotely over a video-call platform. The training program consisted of one day introductory training on Acceptance and Commitment Therapy, with a focus on experiential learning, and one day practical training on the delivery of the three workshop sessions. Each dyad was provided with the resources to deliver the workshops to their class, which included three PowerPoint presentations and accompanying instructions for delivery. Each dyad was also offered an additional two-hour supervision session following the training and prior to commencing the workshops, however this session was only utilised by one teacher.

Student outcome measure completion

Students in both the intervention and control classes completed a set of questionnaires in the week prior to the first workshop (pre-intervention), in the week following the final workshop (post-intervention) and six weeks following the final workshop (follow-up). Students completed their questionnaires through an online survey platform, using a unique identifier provided by their teacher. The use of unique identifiers prevented the research team from being able to connect any

individual student with their responses, whilst allowing the research team to report to the school if any responses indicated a student was experiencing a clinical level of distress. A clinical level of mental distress was indicated by a score above 70 on the Revised Children's Anxiety and Depression Scale (RCADS-25) (Ebesutani et al., 2012).

With regard to outcome measure completion rates, 14% of students from the intervention condition and 11% students from the control condition did not complete outcome measures at any timepoint. Outcome measure completion was not compulsory for students, and therefore students were not required to give reasons for their non-completion.

Primary outcome measure

The Short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS). Wellbeing was selected as the primary outcome for this study as it was felt to best fit with an ACT approach and the universal school intervention design, which do not specifically target mental health symptom reduction. The SWEMWBS is a seven-item measure of mental wellbeing in the general population, adapted from the full 14-item scale (Stewart-Brown et al., 2009) (Appendix J). An example statement is 'I've been feeling relaxed'. This scale was adapted to ask students to select the answer that best described their experience over the past two weeks, as opposed to one month, to avoid overlap with the previous outcome measure completion timepoint. Each of the seven statements are scored on a five-point scale from one (none of the time) to five (all of the time). Metric scores were calculated from the raw scores using the SWEMWBS conversion table. A higher score reflects a higher level of wellbeing. Clarke et al. (2011) found that the full version of the WEMWBS is a psychometrically strong population measure of mental wellbeing and can be used for this purpose in teenagers aged 13 and over. The SWEMWBS has been validated for populations of young people aged 15-21 (McKay and Andretta, 2017; Ringdal et al., 2018). More recently, Melendez-Torres et al. (2019) found that the SWEMWBS has satisfactory measurement invariance properties and provides good evidence for construct validity in secondary school students in years 7 to 11 (ages 11 to 16).

Secondary outcome measures

Revised Children's Anxiety and Depression Scale (RCADS-25). The RCADS-25 is a 25-item measure of anxiety and depression symptoms in young people, adapted from the full 47-item scale (Ebesutani et al., 2012) (Appendix K). Ten items contribute to the depression subscale and 15 items to the anxiety subscale. An example statement on the anxiety subscale is 'I worry what other people think of me'. An example statement on the depression subscale is 'I feel worthless'. Each of the 25 items are scored on a three-point scale from 0 (never) to 2 (often), with higher scores reflecting a higher level of depression or anxiety. Klaufus et al., (2020) evaluated the psychometric properties of the RCADS-25 in a general population of schoolchildren and adolescents. They found that the anxiety scale demonstrated a sufficient structural validity, internal consistency ($\alpha = 0.82$), test-retest reliability ($ICC = 0.73$), criterion validity ($AUC = 0.79$), and all four hypotheses concerning construct validity were confirmed. The depression scale demonstrated a sufficient test-retest reliability ($ICC = 0.70$) and three out of four hypotheses concerning construct validity were confirmed.

Perceived Stress Scale (PSS-4). The PSS is a tool for measuring psychological stress (Cohen et al., 1983). A four-item PSS (PSS-4) was adapted from the full 14-item version as a brief version for situations requiring a very short scale or telephone interviews (Cohen & Williamson, 1988) (Appendix L). Participants rate four items on a five-point scale, from 0 (never) to 4 (very often). Higher scores indicate greater perceived stress. This scale was adapted to ask students to select the response that best represented how often they felt or thought a certain way over the past two weeks, as opposed to one month, to avoid overlap with the previous outcome measure completion timepoint. An example item is 'In the last two weeks, how often have you felt that you were unable to control the important things in your life?'

The PSS items focus on the general nature of feelings and thoughts about stress rather than specific events or experiences, therefore this scale is suggested to measure the global level of stress in any population. A number of studies have utilized the PSS to measure self-reported stress in

various adolescent samples such as middle school students (e.g., Yosipovitch et al., 2007; Edwards et al., 2014) and adolescents in clinical settings (e.g., Martin et al., 1995; Siqueira et al., 2000).

Process measure

Child Acceptance and Mindfulness Measure (CAMM). The CAMM is a ten-item scale which assesses two elements of psychological flexibility: mindfulness and acting with awareness (e.g., 'At school, I walk from class to class without noticing what I'm doing'), and acceptance without judgment or avoidance (e.g., 'I get upset with myself for having certain thoughts') (Greco and Smith., 2011) (Appendix M). Each item is scored on a five-point scale from zero (never true) to four (always true). Higher scores indicate higher levels of mindfulness. The CAMM has been validated in adolescent samples (10-16 years), with a Cronbach's alpha of .81 (Greco and Smith, 2011).

Patient Reported Experience Measure (PREM)

An eight-item measure of workshop satisfaction was developed by the researchers specifically for this study (Appendix N). The first four items asked participants to rate four statements on a five-point Likert scale from strongly disagree to strongly agree. An example statement is 'I will use the skills learnt in the workshops in my everyday life'. Item five asked participants to think about the number of workshops they received and indicate whether they thought this was 'not enough', 'about the right number' or 'too many'. Items six to eight allowed free text responses for the participants to state what they liked and disliked about the workshops, and to leave any additional comments.

Data Analysis

Statistical analysis was completed using IBM SPSS Statistics 26.0. Initially, descriptive statistics were calculated, and the data was examined for normality. To explore any differences at baseline between the intervention and control groups, pairwise comparisons from the multi-level modelling analysis were used.

Multi-level modelling was used to test the effects of the ACT intervention on mental health and wellbeing outcomes. This method of analysis is considered to be particularly appropriate for when the dropout rate is above 5% as it includes all available data for all participants and adjusts for missing data and patterns in the obtained data linked to drop out (Verbeke and Molenberghs, 2000). Multi-level modelling is also recommended in settings where repeated measurements are made on the same statistical units (longitudinal study), or where measurements are made on clusters of related statistical units (e.g., students clustered within schools). This method is able to account for the fact that observations made within clusters tend to be more highly correlated than between clusters. The ability to account for significant drop out as well as clustering of data makes multi-level modelling particularly appropriate for school-based studies. Based on the study design, a three-level model was used: time point was nested within subject, and subject nested within school. The fixed effects included in the model were group, time and the group by time interaction. Random effects included in the model were subject and school. The parameters of the model were estimated using restricted maximum likelihood. No data was excluded for participants who did not receive the full intervention as this was an intention-to-treat analysis, designed to replicate how subjects would receive an intervention in a real-life setting.

Effect sizes were computed using pairwise comparisons in order to gain absolute measures of the effect size. The absolute effect sizes provide the difference in the means for the comparison of interest on the scale the data was measured rendering the values more interpretable and providing information about practical significance. This method of computing effect sizes is suggested to be more suitable for multilevel modelling analyses than the more traditional Cohen's *d* method which was designed for simpler methods of analysis such as *t*-tests (Oleson et al., 2019).

Thematic analysis was used to analyse the qualitative data obtained from the PREM, using the systematic method proposed by Braun and Clarke (2006). This involved the researcher familiarising themselves with the data, generating initial codes, searching for themes through

collating codes, reviewing the themes, and then defining and naming the themes for presentation in this paper.

Results

Mean scores and standard errors for the ACT group and the control group are presented in Table 1.

Table 1

Means and standard errors for outcome measures at each timepoint (N=315)

		ACT group		Control group	
		M	SE	M	SE
Wellbeing	Pre	22.060	.546	22.127	.544
	Post	21.658	.552	21.805	.559
	Follow up	21.612	.554	21.778	.555
Stress	Pre	6.662	.292	6.218	.290
	Post	6.627	.300	7.644	.307
	Follow up	6.682	.303	6.036	.304
RCADS Anxiety	Pre	51.398	1.531	50.628	1.517
	Post	52.713	1.555	51.162	1.574
	Follow up	51.148	1.567	49.480	1.566
RCADS Depression	Pre	52.435	1.429	50.75	1.413
	Post	54.326	1.467	51.615	1.504
	Follow up	53.780	1.478	51.925	1.493
RCADS total	Pre	51.989	1.602	50.667	1.586
	Post	53.728	1.631	51.420	1.658
	Follow up	52.360	1.641	50.429	1.648
Mindfulness	Pre	24.072	.647	24.452	.632
	Post	23.72	.663	24.419	.680
	Follow up	25.440	.669	25.865	.670

Baseline comparisons

Comparison of the baseline scores between the ACT group and the control group found no significant differences for wellbeing ($p=.883$), stress ($p=.194$), RCADS-anxiety ($p=.638$), RCADS depression ($p=.343$), RCADS total score ($p=.46$) or mindfulness ($p=.674$). A chi square test of independence confirmed that there were no significant differences in gender distribution between the two groups at baseline ($p=.533$)

Intervention outcome

The findings from the multi-level modelling are presented in Table 2. There were no significant differences between the ACT group and the control group for the main effects or the interaction effect for wellbeing, RCADS-anxiety, RCADS-depression or RCADS-total. For mindfulness, there was a significant main effect for time ($p=.001$), however no significant group by time interaction ($p=.931$). For stress there was a significant main effect for time ($p=.000$) and a significant group by time interaction ($p=.000$).

Table 2*Main effects and interaction effects for all outcome variables (N=315)*

	Group				Time				Group x time			
	DF ₁	DF ₂	F	P	DF ₁	DF ₂	F	p	DF ₁	DF ₂	F	p
Wellbeing	1	292.	.103	.748	2	441.	2.109	.123	2	443.	.030	.970
		091				661				175		
Stress	1	295.	.007	.932	2	451.	10.641	.000	2	452.	12.042	.000
		637				69				963		
RCADS	1	292.	.844	.359	2	425.	2.218	.110	2	426.	.226	.798
Anxiety		723				448				406		
RCADS	1	289.	1.919	.167	2	436.	1.447	.236	2	437.	.175	.840
Depression		374				530				467		
RCADS total	1	291.	1.413	.236	2	430.	1.305	.272	2	431.	.177	.838
		963				484				439		
Mindfulness	1	301.	.419	.518	2	446.	7.138	.001	2	446.	.072	.931
		138				847				847		

Note: DF₁ represents numerator DF, DF₂ represents denominator DF

Pairwise comparisons presented in Table 3 provide the absolute effect sizes across all outcome variables. The significant interaction effect for stress was accounted for by significantly higher stress scores at post-intervention in the control group compared to the intervention group ($p = .005$). At the six-week follow up, the stress scores for the intervention group were slightly higher than those for the control group, but this difference was not statistically significant ($p = .075$). This demonstrates a consistent pattern of non-significant change over time for the intervention group as seen across the other variables, however a marked increase in stress for the control group at post-intervention that then reduced to levels lower than baseline at follow-up.

Table 3*Pairwise comparisons for all outcome variables across timepoints (N=315)*

Outcome	Timepoint	Mean difference (intervention -control)	Std error	DF	P value	95% Confidence interval	
						Lower bound	Upper bound
Wellbeing	Pre	-.067	.453	484.725	.883	-.824	.957
	Post	-.147	.477	547.251	.758	-1.084	.790
	Follow up	-.166	.476	542.546	.728	-1.100	.769
Stress	Pre	.445	.341	528.109	.194	-.226	1.115
	Post	-1.017	.363	592.712	.005	-1.729	-.305
	Follow up	.646	.362	590.073	.075	-.066	1.358
RCADS Anxiety	Pre	.770	1.635	452.276	.638	-2.443	3.982
	Post	1.552	1.710	507.963	.365	-1.808	4.911
	Follow up	1.668	1.715	510.447	.331	-1.700	5.037
RCADS Depression	Pre	1.685	1.777	509.673	.343	-1.806	5.176
	Post	2.712	1.879	570.620	.150	-.980	6.403
	Follow up	1.855	1.881	569.604	.324	-1.839	5.548
RCADS total	Pre	1.321	1.787	471.400	.460	-2.190	4.833
	Post	2.308	1.876	529.838	.219	-1.378	5.994
	Follow up	1.932	1.877	529.300	.304	-1.756	5.619
Mindfulness	Pre	-.380	.904	508.332	.674	-2.156	1.396
	Post	-.699	.950	563.012	.462	-2.564	1.166
	Follow up	-.426	.947	559.312	.653	-2.285	1.434

Program evaluation

Participants in the intervention group were asked to complete the Patient Reported Experience Measure (PREM) at the post-intervention timepoint. The results of the initial four questions are presented in Table 4.

Table 4

Patient Reported Experience Measure Questions 1-4

Question	N	Strongly disagree	Disagree	Not Sure	Agree	Strongly Agree
I will use the skills learnt in the workshops in my everyday life.	113	6%	7%	45%	35%	7%
It was easy to understand the topics discussed.	113	2%	5%	20%	46%	27%
I feel better able to do things that are important to me, even if difficult thoughts or feelings are there.	113	6%	12%	31%	40%	11%
I found the questionnaires easy to complete.	113	4%	11%	31%	36%	18%

In response to question 5 on the PREM (N=114) which asked students how they perceived the number of workshops, 17% of students selected 'not enough', 74% selected 'about the right number', and 9% selected 'too many'.

Qualitative responses on questions six and seven on the PREM were as follows. To the statement 'Please tell us what you thought was good about the workshops (if anything)', 56 students responded. The most common themes in the responses were: (1) having the opportunity to talk about feelings without judgement (e.g., "I felt that my feelings were accepted" "It was nice to know

that others feel the same way”, “We all came together as a class and talked about our feelings”; and (2) learning new skills for everyday life (e.g. “I got to learn new skills for when I feel worried or stressed” “The workshop taught me skills I will use in everyday life”, “The workshops gave some good ideas for things like relaxing, getting to sleep etc. They were informative and made me more aware of worries and thoughts.”)

To the statement ‘Please tell us if you think we should have done anything different in the workshops’, 34 students responded. The most common themes were: (1) more activities during the workshop sessions to make them more engaging and interactive (e.g., “Include us in more activities”, “Have some fun activities and get us moving around”), (2) to have more sessions (e.g. “I think the workshops should cover more than three sessions”, “Maybe have some more workshops because I found them very good”), and (3) more age-appropriate content (e.g. “Use more adult scenarios”, “Make it more suitable for teenagers than younger children”).

Discussion

The current study evaluated the efficacy of a brief universal ACT intervention delivered in secondary schools on students self-reported wellbeing, anxiety, depression, stress and levels of mindfulness. It was hypothesised that students who received the ACT intervention would demonstrate improvements in their mental health and wellbeing, relative to a control group of students receiving their normal lessons. The results demonstrated no significant effects of the ACT intervention on the primary outcome of wellbeing, secondary outcomes of anxiety, depression or the process measure of mindfulness. However, a significant group by time interaction was found on the secondary outcome of stress.

Further interpretation of the results using effect sizes demonstrated little change over time in the intervention group scores across all outcome variables. The control group scores demonstrated a similar pattern of little change over time across the majority of outcomes, with the exception of the stress outcome. A significant increase in stress was found in the control group at

post-intervention, suggesting a potential protective effect of the ACT intervention at this timepoint. However, levels of stress in the control group returned to baseline levels at follow-up.

When interpreting the results for the stress outcome variable it is important to note that research published since the initiation of this study on the use of PSS-4 has questioned its validity. Demcowicz et al., (2020) investigated the factor structure, internal consistency, and validity of the PSS-4 in a large sample of English adolescents. This study found that the original unidimensional structure was not viable, and recommended against the use of the four-item version when it is possible to use the full scale. In light of this research and lack of significance across the other variables in the current study, the significant finding on the stress outcome variable should be interpreted with caution.

In light of the lack of significant findings across the majority of the outcome measures in the current study, it is important to consider how the efficacy of the intervention may be improved. This study used a brief three-session workshop format, with each session lasting one hour. Previous studies that have found ACT to be an effective intervention in schools have used interventions ranging between five hours of input (with supplementary coaching) to ten hours (Fang and Ding, 2020; Livheim et al., 2015; Pahnke et al., 2014; Puolakanaho et al., 2019; Smith et al., 2020). An exception to this is seen in research by Levin et al. (2014) where significant improvements in symptoms of depression were found following a two-session web-based ACT intervention. This intervention was a self-directed online tutorial which students accessed for a mean time of 82 minutes. However, students in this program were college-based and had a mean age of 18.37, which introduces a confounding factor of age. Therefore, it may be that younger students require more sessions in order for the intervention to be effective. However, it is also important to consider that a brief approach, as used in this study, is more viable to integrate into the school curriculum therefore a careful balance must be drawn.

An additional factor which may have contributed to the lack of significant findings in this study is the use of mental health and wellbeing outcome measures to quantify the effectiveness of a universal intervention programme. Universal programs aim to provide a preventative intervention; therefore, it is likely that those students accessing the workshops who are not experiencing any current difficulties with mood would not experience any immediate effects of the intervention with regard to self-reported mental health symptoms. These findings align with previous research that has found higher levels of effectiveness in targeted compared to universal school-based interventions on outcomes of depression, anxiety and stress (Corrieri et al, 2014; Werner-Seidler et al., 2017; Feiss et al., 2019). This study aimed to address the potential weaknesses of using mental health symptom measures to assess the effectiveness of universal interventions by including a primary outcome measure of wellbeing, however it may be that further consideration of the aims of universal interventions is needed when designing methods of assessing their effectiveness. It may be that a more valid measure of the success of universal interventions would be assessing factors such as the level of student confidence in using coping skills and belief in ability to manage future difficulties.

Strengths and limitations

A strength of this study was its randomised controlled trial design, which reduces participant bias by distributing the characteristics of participants that may influence the outcome randomly between an intervention and control group. Cluster randomisation was used due its practical advantages as it was necessary to ensure that taking part in the trial was feasible for schools who likely would have experienced challenges in having to disrupt standard class groups. A limitation of cluster trials is that the responses of individuals within each cluster are often correlated with regards to environmental, socioeconomic, and other specified or non-specified factors (Donner and Klar, 1994), however this was accounted for in this study by use of multilevel modelling which accounts for clustered units of data.

This study was more methodologically robust than many of the previous studies exploring the use of ACT in schools in that it included a control condition, a follow up assessment point and outcome measures specifically validated for young people, including a process measure. Future research may benefit from a longer-term follow up, as well as exploring whether changes in process measures lead to a change in outcomes.

This study tested a real-world implementation of ACT in schools through integrating the intervention into standard classroom curriculum and training classroom teachers and school counsellors as facilitators. Utilising in-school staff as facilitators as opposed to using psychologists as in the initial feasibility trial (Harris, 2019) increases the accessibility and reach of the intervention, as facilitation is less costly and more embedded within the existing school system. These benefits were also seen in the use of a universal, non-targeted intervention, which are easier to integrate into existing school structures and do not exclude students who do not display symptoms of a mental health difficulty who may still benefit (Fazel et al., 2014).

The intervention used in this study was developed based on service user feedback from the initial feasibility trial (Harris, 2019). Research has demonstrated the importance of young people taking an active role in the development of new interventions to ensure a child-centred approach and support at a whole-school level (Hall, 2010; O'Reilly et al., 2017). This study was also the first randomised controlled trial of a school-based ACT intervention in the UK, providing preliminary evidence for the application of interventions in this setting, and is in line with recent government agendas to increase universal mental health provision in schools.

A further strength of this study was the combined skill set of teachers and school counsellors in delivering the intervention. The school counsellors were able to apply their mental health training and therapeutic stance to delivery and the teachers were able to utilise their skills in classroom management and engage the students via pre-existing relationships. The adherence of the dyad to the training program, as well as fidelity to the ACT model was explored in a separate study, and it

was found that overall, both adherence and fidelity were high amongst the dyads. This provides good preliminary evidence for a co-facilitation approach in schools between a mental health professional and a teacher. The training of in-school staff in mental health approaches as opposed to utilising external professionals may also help to create a cultural shift in the educational context regarding attitudes to mental health, as teachers gain increased awareness and confidence in this area (Weist and Murray, 2008).

A limitation of this study design was the small sample size, which occurred due to Covid-19 related recruitment difficulties. Schools contacted during recruitment reported facing additional pressures and demands due to Covid-19 and therefore many schools felt unable to commit to additional projects during this period. However, it is important to note that within this small sample size a range of schools from varying socioeconomic backgrounds and geographical areas were used which helps to reduce bias in the sample.

An accurate power analysis was not able to be performed for this study due to the complex modelling approach used. Multilevel modelling requires power to be calculated using a simulation approach which uses representative data from existing literature in order to compute accurate power estimates (Snijders, 2005). Due to the lack of existing literature replicating this study design using the same outcomes as used in this study, it was not possible to achieve an accurate power calculation.

A further limitation was the significant amount of missing data. There were variations in the amount of data received from different schools, which was likely as a result of teacher engagement in the project and availability to commit to student questionnaire completion. Some of the teachers set aside lesson time for student questionnaire completion which resulted in significantly higher completion rates compared to when students were allocated the questionnaires as homework. The significant amount of missing data and variability in completion rates between schools was accounted for through use of multi-level modelling which adjusts for missing data and patterns in

the obtained data linked to drop out, however more preliminary work to engage students in the study (e.g., site visits) may benefit future research by encouraging a higher completion rate.

As this research was conducted during the Covid-19 pandemic, it is likely that there was a significant level of disruption to our participants' schooling and home lives throughout the data collection period, which may have introduced a confounding factor for mood and wellbeing. Guessoum (2020) outlined the risks of Covid-19 to the mental health of young people stating that "the COVID-19 pandemic could result in increased psychiatric disorders such as Post-Traumatic Stress, Depressive, and Anxiety Disorders, as well as grief-related symptoms." (p.1). Similar conclusions were drawn by O'Sullivan et al., (2021) who conducted a qualitative study seeking to understand the experiences of young people during Covid-19. In this study, young people and their families identified the negative impact of lifestyle changes as a result of Covid-19 upon wellbeing and adverse mental health effects including feelings of depression and anxiety.

Recommendations for future research

Future research with a larger sample size conducted post-recovery from the Covid-19 pandemic would be of benefit. As the sample size at the highest level is the main limiting characteristic of a clustered sample, a future study with a larger number of schools as well as students will be important to increase power (Snijders, 2005). Future research may want to examine the impact of increasing the number of intervention sessions upon outcomes. Additionally, a larger sample size spanning a range of ages may be helpful in identifying the impact of the intervention on younger compared to older adolescents. It is important that in future trials the fidelity of facilitators to the ACT protocol is carefully monitored in order to obtain valid outcomes. A future trial comparing the InTER-ACT protocol to another active treatment group in addition to a control group may also be of benefit. A treatment method that has been found in previous research to be effective for the specific population being studied is the most stringent comparison condition to use (Ost, 2008). Therefore, future research might compare ACT with a CBT condition given this has been

widely used as a preventative mental health intervention for adolescents (Fenwick -Smith et al., 2018; Sutan et al., 2018; Dray et al., 2017). A longer-term follow up should be considered in future trials, Ost et al. (2008) recommends a minimum of one year.

Conclusion

This study contributes to the evidence base for ACT interventions in schools, with a real-world implementation of a brief workshop program in the school curriculum. The findings of this research provide some preliminary evidence for a positive effect of the intervention on stress, however no other significant outcomes were found. This research was conducted during the challenging period of the Covid-19 pandemic which led to methodological limitations and the introduction of potential confounding factors for the mental health and wellbeing of young people. Despite these limitations, this study generates several areas of focus for future research and provides a template for a larger trial.

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GUIDE FOR AUTHORS

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[dataset] Oguro, M., Imahiro, S., Saito, S., & Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. <https://doi.org/10.17632/xwj98nb39r.1>.

Reference to a conference paper or poster presentation:

Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). *The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales*. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

Reference Style

Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Seventh Edition, ISBN 978-1-4338-3215-4, copies of which may be [ordered online](#) or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK.

List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications*, 163, 51–59. <https://doi.org/10.1016/j.Sc.2010.00372>.

Reference to a journal publication with an article number:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2018). The art of writing a scientific article. *Heliyon*, 19, e00205. <https://doi.org/10.1016/j.heliyon.2018.e00205>.

Reference to a book:

Strunk, W., Jr., & White, E. B. (2000). *The elements of style*. (4th ed.). New York: Longman, (Chapter 4).

Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.

Reference to a website:

Cancer Research UK. Cancer statistics reports for the UK. (2003). <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/> Accessed 13 March 2003.

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. <https://doi.org/10.17632/xwj98nb39r.1>.

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Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). *The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales*. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

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Appendix B: Excluded articles with reasons

Excluded Articles

Reference	Reason for exclusion
Burckhardt, R., Manicavasagar, V., Batterham, P. J., & Hadzi-Pavlovic, D. (2016). A randomized controlled trial of strong minds: A school-based mental health program combining acceptance and commitment therapy and positive psychology. <i>Journal of school psychology, 57</i> , 41-52.	ACT intervention combined with positive psychology.
Gómez, M. J., Luciano, C., Páez-Blarrina, M., Ruiz, F. J., Valdivia-Salas, S., & Gil-Luciano, B. (2014). Brief ACT protocol in at-risk adolescents with conduct disorder and impulsivity. <i>International Journal of Psychology and Psychological Therapy, 14</i> (3), 307-332.	ACT intervention not based in a secondary school. Primary outcome measures related to behaviour rather than mental health and wellbeing.
Habibollahi, A., & Soltanizadeh, M. (2016). Efficacy of Acceptance and Commitment Therapy on Body Dissatisfaction and Fear of Negative Evaluation in Girl adolescents with Body Dysmorphic Disorder. <i>Journal of Mazandaran University of Medical Sciences, 25</i> (134), 278-290.	Full text in Arabic.
Kelly, M. (2015). <i>Effectiveness of Acceptance and Commitment Group Therapy for the Treatment of Perfectionistic and Anxious Adolescent Girls</i> . Palo Alto University.	ACT intervention not based in a secondary school. Dissertation paper not published in a peer reviewed journal.
Brookshier, A. R. (2016). <i>Ameliorating Anxiety in the School Setting Using Acceptance and Commitment Therapy and Mindfulness</i> (Doctoral dissertation, Northern Arizona University).	Dissertation paper not published in a peer reviewed journal.
Mendoza, J. J. (2018). <i>The effectiveness of a modified acceptance and commitment therapy treatment module within a Northern California high school</i> (Dissertation Abstracts International: Section B: The Sciences and Engineering). requested from Cardiff uni library.	Dissertation paper not published in a peer reviewed journal.
Noormohamadi, S. M., Arefi, M., Afshaini, K., & Kakabaraee, K. (2019). The effect of acceptance and commitment therapy on the mental health of students with an emotional	Full text not available.

breakdown. *International Journal of Adolescent Medicine and Health*, 1(ahead-of-print).

Pentcheva-Burns, M. (2015). *Effects of Acceptance and Commitment Therapy for diverse symptomatology in immigrant youth*. Hofstra University.

Dissertation paper not published in a peer reviewed journal.

Theodore-Oklot, C., Orsillo, S. M., Lee, J. K., & Vernig, P. M. (2014). A pilot of an acceptance-based risk reduction program for relational aggression for adolescents. *Journal of Contextual Behavioural Science*, 3(2), 109-116.

ACT intervention combined with psycho-education on relational aggression.

Azadeh, S. M., Kazemi-Zahrani, H., & Besharat, M. A. (2016). Effectiveness of acceptance and commitment therapy on interpersonal problems and psychological flexibility in female high school students with social anxiety disorder. *Global journal of health science*, 8(3), 131.

Participants recruited from secondary school but intervention not school-based.

Bernal-Manrique, K. N., García-Martín, M. B., & Ruiz, F. J. (2020). Effect of acceptance and commitment therapy in improving interpersonal skills in adolescents: A randomized waitlist control trial. *Journal of Contextual Behavioral Science*, 17, 86-94.

Primary outcome measure not related to mental health or wellbeing.

Murrell, A. R., Steinberg, D. S., Connally, M. L., Hulse, T., & Hogan, E. (2015). Acting out to ACTing on: A preliminary investigation in youth with ADHD and co-morbid disorders. *Journal of Child and Family Studies*, 24(7), 2174-2181.

ACT intervention not based in a secondary school.

Appendix C: Psychotherapy Outcome Study Methodology Rating Form (POMRF)

1. Clarity of sample description

0 Poor. Vague description of sample (e.g. only mentioned whether patients were diagnosed with the disorder).

1 Fair. Fair description of sample (e.g. mentioned inclusion/exclusion criteria, demographics, etc.).

2 Good. Good description of sample (e.g. mentioned inclusion/exclusion criteria, demographics, and the prevalence of comorbid disorders).

2. Severity/chronicity of the disorder

0 Poor. Severity/chronicity was not reported and/or subsyndromal patients were included in the sample.

1 Fair. All patients met the criteria for the disorder. Sample includes acute (01 yr) and/or low severity.

2 Good. Sample consisted entirely of chronic (41 yr) patients of at least moderate severity.

3. Representativeness of the sample

0 Poor. Sample is very different from patients seeking treatment for the disorder (e.g. there are strict exclusion criteria).

1 Fair. Sample is somewhat representative of patients seeking treatment for the disorder (e.g. patients were only excluded if they met criteria for other major disorders).

2 Good. Sample is very representative of patients seeking treatment for the disorder (e.g. authors made efforts to ensure representativeness of sample).

4. Reliability of the diagnosis in question

0 Poor. The diagnostic process was not reported, or not assessed with structured interviews by a trained interviewer.

1 Fair. The diagnosis was assessed with structured interview by a trained interviewer.

2 Good. The diagnosis was assessed with structured interview by a trained interviewer and adequate inter-rater reliability was demonstrated (e.g. kappa coefficient).

5. Specificity of outcome measures

0 Poor. Very broad outcome measures, not specific to the disorder (e.g. SCL-90R total score).

1 Fair. Moderately specific outcome measures.

2 Good. Specific outcome measures, such as a measure for each symptom cluster.

6. Reliability and validity of outcome measures

0 Poor. Measures have unknown psychometric properties, or properties that fail to meet current standards of acceptability.

1 Fair. Some, but not all measures have known or adequate psychometric properties.

2 Good. All measures have good psychometric properties. The outcome measures are the best available for the authors' purpose.

7. Use of blind evaluators

0 Poor. Blind assessor was not used (e.g. assessor was the therapist, assessor was not blind to treatment condition, or the authors do not specify).

1 Fair. Blind assessor was used, but no checks were used to assess the blind.

2 Good. Blind assessor was used in correct fashion. Checks were used to assess whether the assessor was aware of treatment condition.

8. Assessor training

0 Poor. Assessor training and accuracy are not specified, or are unacceptable.

1 Fair. Minimum criterion for assessor training is specified (e.g. assessor has had specific training in the use of the outcome measure), but accuracy is not monitored or reported.

2 Good. Minimum criterion of assessor training is specified. Inter-rater reliability was checked, and/or assessment procedures were calibrated during the study to prevent evaluator drift.

9. Assignment to treatment

0 Poor. Biased assignment, e.g. patients selected their own therapy or were assigned in another non-random fashion, or there is only one group.

1 Fair. Random or stratified assignment. There may be some systematic bias but not enough to pose a serious threat to internal validity. There may be therapist by treatment confounds. N may be too small to protect against bias.

2 Good. Random or stratified assignment, and patients are randomly assigned to therapists within condition. When theoretically different treatments are used, each treatment is provided by a large enough number of different therapists. N is large enough to protect against bias.

10. Design

0 Poor. Active treatment vs. WLC, or briefly described TAU.

1 Fair. Active treatment vs. TAU with good description, or placebo condition.

2 Good. Active treatment vs. another previously empirically documented active treatment.

11. Power analysis

0 Poor. No power analysis was made prior to the initiation of the study.

1 Fair. A power analysis based on an estimated effect size was used.

2 Good. A data-informed power analysis was made and the sample size was decided accordingly.

12. Assessment points

0 Poor. Only pre- and post-treatment, or pre- and follow-up.

1 Fair. Pre-, post-, and follow-up <1 year.

2 Good. Pre-, post-, and follow-up >1 year.

13. Manualized, replicable, specific treatment programs

0 Poor. Description of treatment procedure is unclear, and treatment is not based on a publicly available, detailed treatment manual. Patients may be receiving multiple forms of treatment at once in an uncontrolled manner.

1 Fair. Treatment is not designed for the disorder, or description of the treatment is generally clear and based on a publicly available, detailed treatment manual, but there are some ambiguities about the procedure. Patients may have received additional forms of treatment, but this is balanced between groups or otherwise controlled.

2 Good. Treatment is designed for the disorder. A detailed treatment manual is available, and/or treatment is explained in sufficient detail for replication. No ambiguities about the treatment procedure. Patients receive only the treatment in question.

14. Number of therapists

0 Poor. Only one therapist, i.e., complete confounding between therapy and therapist.

1 Fair. At least two therapists, but the effect of therapist on outcome is not analyzed.

2 Good. Three, or more therapists, and the effect of therapist on outcome is analyzed.

15. Therapist training/experience

0 Poor. Very limited clinical experience of the treatment and/or disorder (e.g. students).

1 Fair. Some clinical experience of the treatment and/or disorder.

2 Good. Long clinical experience of the treatment and the disorder (e.g. practicing therapists).

16. Checks for treatment adherence

0 Poor. No checks were made to assure that the intervention was consistent with protocol.

1 Fair. Some checks were made (e.g. assessed a proportion of therapy tapes).

2 Good. Frequent checks were made (e.g. weekly supervision of each session using a detailed rating form).

17. Checks for therapist competence

0 Poor. No checks were made to assure that the intervention was delivered competently.

1 Fair. Some checks were made (e.g. assessed a proportion of therapy tapes).

2 Good. Frequent checks were made (e.g. weekly supervision of each session using a detailed rating form).

18. Control of concomitant treatments (e.g. medications)

0 Poor. No attempt to control for concomitant treatments, or no information about concomitant treatments provided. Patients may have been receiving other forms of treatment in addition to the study treatment.

1 Fair. Asked patients to keep medications stable and/or to discontinue other psychological therapies during the treatment.

2 Good. Ensured that patients did not receive any other treatments (medical or psychological) during the study.

19. Handling of attrition

0 Poor. Proportions of attrition are not described, or described but no dropout analysis is performed.

1 Fair. Proportions of attrition are described, and dropout analysis or intent-to-treat analysis is performed.

2 Good. No attrition, or proportions of attrition are described, dropout analysis is performed, and results are presented as intent-to-treat analysis.

20. Statistical analyses and presentation of results

0 Poor. Inadequate statistical methods are used and/or data are not fully presented.

1 Fair. Adequate statistical methods are used but data are not fully presented.

2 Good. Adequate statistical methods are used and data are presented with M and SD.

21. Clinical significance

0 Poor. No presentation of clinical significance was done.

1 Fair. An arbitrary criterion for clinical significance was used and the conditions were compared regarding percent clinically improved.

2 Good. Jacobson's criteria for clinical significance were used and presented for a selection (or all) of the outcome measures, and conditions were compared regarding percent clinically improved.

22. Equality of therapy hours (for non-WLC designs only)

0 Poor. Conditions differ markedly (>20% difference in therapy hours).

1 Fair. Conditions differ somewhat (10–19% difference in therapy hours).

2 Good. Conditions do not differ (<10% difference in therapy hours).

Appendix D: Ethical approval from Cardiff University School of Psychology

Ethics Feedback - EC.17.11.14.5006R6A7

psychethics <psychethics@cardiff.ac.uk>

Tue 06/10/2020 14:15

To: Victoria Samuel <SamuelV3@cardiff.ac.uk>

Cc: Laura Knight <KnightL5@cardiff.ac.uk>

Dear Victoria,

The Ethics Committee has considered the amendment to your Staff project proposal: Training School Counsellors & Pastoral Care Staff to Deliver a Brief Non-Targeted ACT Intervention in Schools (InTER-ACT2): Training Satisfaction, Fidelity & Efficacy (EC.17.11.14.5006R6A7).

The amendment has been approved.

The Chair has asked me to highlight that usually, although quite minor, such an amendment should come through the Committee and be reviewed by two reviewers (as opposed to just by the Chair) so we have made an additional effort to approve this rapidly.

Please note that if any changes are made to the above project then you must notify the Ethics Committee.

Best wishes,
Adam Hammond

School of Psychology Research Ethics Committee

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psychethics@caerdydd.ac.uk

Please note that I do not expect a response to this email outside of your normal working hours

Nid wyf yn disgwyl ymateb i'r ebost hwn y tu allan i'ch oriau gwaith arferol

Appendix E: Gatekeeping letter to schools

[Date]

Dear [school contact],

We are two Trainee Clinical Psychologists on the South Wales Doctoral Programme in Clinical Psychology and we are looking to carry out a study on school-based interventions as part of our university course. We are writing to enquire whether you would be interested in allowing us to involve students from your school with the project. Further details can be found below:

Project title: Training School Counsellors & Teachers/Pastoral Care Staff to Deliver a Brief Non-Targeted ACT Intervention in Schools (INTER-ACT2): Training Satisfaction, Fidelity & Efficacy.

Supervisors: Dr Victoria Samuel (*Senior Research Tutor, South Wales Doctoral Programme in Clinical Psychology, Cardiff University*) and Dr Chloe Constable (*Clinical Psychologist, Children and Young People Service, 2GETHER NHS Foundation Trust*)

Description of project:

Background

It is estimated that 1 in 10 children in the UK have a mental health difficulty. However, only 25% of children and young people with a mental health difficulty have been able to access mental health services. This has led to recommendations that preventative mental health work in schools and evidence-based practice is needed. The project will be evaluating a new type of workshop to improve the well-being of young people and increase their resilience when encountering stressful experiences. The workshop is informed by a new type of Cognitive Behavioural Therapy (CBT), called Acceptance and Commitment Therapy (ACT).

ACT aims to encourage individuals to develop greater flexibility in how they relate to difficult thoughts and feelings so they can focus on working towards what is important to them. Research suggests that ACT is valued by young people and can be helpful in reducing stress and improving well-being. Earlier research (INTER-ACT1) found these ACT workshops to be more acceptable to young people than a parallel Cognitive Behaviour Therapy (CBT) workshop, as well as feasible to deliver in a school setting. This stage of the study aims to:

- explore whether school counsellors and pastoral care staff can deliver the workshops
- evaluate whether these whole classroom workshops may improve outcomes for the young people attending.

Your Schools Involvement

A counsellor already attached to your school and a member of the teaching or pastoral care team, will deliver these workshops to a class of students in Key Stage 3 (years 7-9) in your school. The teacher or pastoral care staff member identified to co-facilitate these workshops will attend a two-day training course alongside the school counsellor.

Following the training, this pair will be supported by the research team to deliver 3 workshops, allocating lesson slots for delivery over a 5-week period. Our plan would be to compare students attending the ACT workshops with another class of students attending their standard PSHE lessons. This would allow us to make comparisons between both classes. The workshops have been developed by psychologists with specialist training in this area. The workshops do not involve

providing students with therapy, they are focused on teaching skills to build resilience based on the ideas of ACT.

Student's Involvement

To evaluate the workshops, we will ask the students in both classes to complete a set of questionnaires at several timepoints (before the first workshop, after the last workshop and at a 6 week follow up). This will be to assess for any changes in wellbeing, psychological flexibility and mental distress.

We will ask students who received the intervention if they would like to take part in short discussions about the intervention, as part of a future project.

Overall, the support that would be required from the school would be:

- Scheduling the workshops within the school curriculum
- Allowing us to contact all parents/carers of Key Stage 3 (years 7-9) students to inform them about the project and seek opt-out consent for completion of the questionnaires
- Facilitating the researchers to collect data as outlined above.

I would be grateful if you could let us know whether the workshops are something that might be of interest to your school. We are happy to answer any questions you may have, and our contact details can be found below. Many thanks in advance for your consideration of this project.

Regards,

Aless Roberts and Laura Knight

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England

Appendix F: Letter to parents

Dear Parent/Guardian

We are two Trainee Clinical Psychologists on the South Wales Doctoral Programme in Clinical Psychology and we are conducting a study on school-based interventions as part of our university course. We are writing to make you aware that this project will be taking place at your child's school, and to give you the opportunity to let us know within two weeks of receiving this letter if you would prefer your child not to take part. If you are happy for your child to take part, you do not need to do anything.

What is the study about?

We will be training the school counsellor and one staff member from your school to deliver short workshops to Key Stage 3 (years 7-9) students which aim to decrease stress and build resilience. These workshops will be part of the school curriculum, and these will be delivered within the usual school timetable. There will be 3 separate workshops delivered over a 5-week period. These workshops are based on learning Acceptance and Commitment skills, which is an approach that has been shown to help with reducing stress and improving well-being in young people. The workshops are skills based and do not involve students receiving therapy.

We will be evaluating these workshops to find out whether they lead to improved outcomes in mental health and wellbeing for students. We will be comparing the workshops with usual PSHE (Personal, Social and Health Education) lessons, therefore some students will attend the workshops, and some will attend their usual PSHE lessons. Classes of students will be allocated to receive the workshops or PSHE lessons at random.

The next paragraph will vary depending on which condition the child's class has been allocated to:

1. *To be included if the child is in the workshop condition:* [The class your child is in has been allocated to receive the workshops. The workshops delivered to the students will be audio recorded (sound but no video) so that the researchers can assess how well the school counsellor and staff member delivering the workshops follow the training they have had. This recording will not be used to analyse any comments made by any student throughout the workshops, it will only be used to assess the workshop facilitators. This audio recording will be made on a secure encrypted device and started after the class register to minimise full names being recorded.]
2. *To be included if the child is in the PSHE condition:* [The class your child is in has been allocated to attend their PSHE lessons as normal.]

We will be asking students who attend both types of classes if they would be happy to complete a set of questionnaires at 3 time points (before the first workshop, after the last workshops and 6 weeks after the last workshop). The questionnaires will cover a number of areas such as mood, thoughts, feelings, stress, and experience of attending the group.

Enclosed is the information sheet we will be providing your child with to help them make an informed decision about whether they would like to participate in completing the questionnaires. Details about how any information your child provides will be used and stored is included in this information sheet. This project has received full ethical approval from Cardiff University.

Although your child will be required to attend either the ACT workshops or PSHE lessons as part of the school curriculum, completing the questionnaires is completely your child's choice.

To be included only if the child's class is allocated to the workshop condition: [Additionally, both you and your child have the opportunity to let us know if you are unhappy with the workshops being audio recorded. If this is the case, your child will be offered the option of attending another lesson. If your child wishes to still attend the workshop then this will not be audio recorded.]

If after reading the information you decide you would prefer that your child was not involved in these elements of the project please let us know within two weeks of receiving this letter, by completing the form below and returning to your child's school/ contacting []. If you are happy with the information, you do not need to complete the form and send it back to the school.

Please get in touch with us if you have any questions.

Yours sincerely,

Aless Roberts	Laura Knight	Dr Victoria Samuel	Dr Chloe Constable
Trainee Clinical Psychologist	Trainee Clinical Psychologist	Senior Research Tutor	Clinical Psychologist
robertsa31@cardiff.ac.uk	Knightl5@cardiff.ac.uk	SamuelV3@cardiff.ac.uk	Chloe.constable@nhs.net
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[] I would prefer that my child does not participate in completing questionnaires.

To be included only if the child's class is allocated to the workshop condition: [] I would prefer that the workshops my child attends are not audio recorded.

Signed: _____

Name of Parent/Guardian: _____

Name of child: _____

If you have any questions relating to ethical issues and how this study is reviewed to ensure the well-being of the individuals who participate, please contact the Cardiff University School of Psychology Ethics Committee:

School of Psychology Research Ethics Committee

Email: psychethics@cardiff.ac.uk

Tel: 029 20870360

Appendix G: Student information sheet

Study name: Evaluating a three-session resilience workshop for secondary school students (InTER:ACT2).

Introduction

Some of the students in your school are going to be taking part in new workshops that have been created to help with managing stress and building resilience. Resilience is the ability to recover from tough or difficult situations. We have developed these workshops based on something called Acceptance and Commitment Therapy (ACT). These workshops do not involve students having therapy sessions, instead they are aimed at teaching practical skills.

The name of this research trial is 'InTER-ACT 2' which stands for 'In-school Training in Emotional Resilience with ACT'. The new workshops will be called the 'InTER-ACT workshops'.

So that we can see how well the InTER-ACT workshops work, we will be comparing them with normal PSHE lessons. You will either attend normal PHSE lessons or the InTER-ACT workshops.

The researchers

The research project is being carried out by two Trainee Clinical Psychologists (Aless Roberts and Laura Knight) who are studying on the South Wales Doctoral Programme in Clinical Psychology. The project is being supervised by Dr Victoria Samuel (Senior Research Tutor, South Wales Doctoral Programme in Clinical Psychology) and Dr Chloe Constable (*Clinical Psychologist, Children and Young People Service, 2GETHER NHS Foundation Trust*).

What will happen if I take part?

Some students will go to the InTER-ACT workshops and some will go to their PSHE lessons as normal. Which type of lesson your class gets will be decided at random. There are 3 InTER-ACT workshops, each lasting about an hour. In the workshops you will not be asked to talk about anything personal if you do not want to.

The InTER-ACT workshops will be audio recorded (sound, but no video) so that the research team can see how closely the two people running the workshops follow the training they have had. The recordings will take place after the class register so that the full names of the students attending are not included in the recordings.

To help us understand how well the workshops are working, you will be sent a link to complete questionnaires online by your teacher. These questionnaires are about how you manage thoughts and feelings and how you deal with stress. You will be asked to fill these in before the first workshop, after the last workshop and then again 6 weeks later. The students who go to their usual PSHE lessons will also be asked to complete questionnaires, so that we can compare the two different types of lessons.

Why are you doing the research project?

Research tells us that lots of secondary school students experience difficult thoughts, feelings and can feel stressed at times. We want to know more about whether teaching young people about managing difficult thoughts and feelings, might help them feel less stressed and more able to cope.

Do I have to take part?

All students will go to the different types of lessons because they are part of the school timetable, but it is up to you whether you want to complete the questionnaires.

What if I change my mind and no longer want to take part?

If you would like to stop completing the questionnaires, you can ignore the online link sent to you. This will not affect your schooling, grades or have any other consequence. Whether you complete the questionnaires is entirely your choice.

Your answers to the questionnaires can be removed if you ask us to within 1 week of you completing the last questionnaire. To do this, you will have to tell us your 'unique identifying number', which will be given to you at the start of the project.

Are there any risks or disadvantages to taking part?

We hope you will enjoy attending the InTER-ACT workshops. In both the workshops and the questionnaires, we will be asking you to think about your feelings and your mood. It is possible this may be upsetting, and we would encourage you to talk to somebody running the workshop if this happens. You can also ask a member of school staff or your parent/carer to let us know if you are finding the workshops or the questionnaires difficult.

What are the benefits of taking part?

The InTER-ACT workshops aim to help people manage difficult thoughts and feelings, and to do more of the things that are important to them. We hope you will learn some helpful, new skills.

For students who attend their PSHE lessons as usual, the information you give us is very important as it allows us to compare InTER-ACT with normal lessons.

How will my information be used?

We will ask your school to give each student a 'unique identifying number', which you will be asked to enter when you complete your questionnaires. The research team will not know which number matches with each student, so that your answers are anonymous. This means that when the research team looks at the questionnaire answers we will not know which student they have come from.

Your teacher will have a copy of your name and unique number but will not see any of your questionnaire answers. However, if we notice you have given an answer which might mean you are very distressed or upset, we will let a member of school staff know (by telling them the unique number on your questionnaire). The school will then meet with you to check how you are feeling and whether you need further support.

All information you give us will be kept safe on a secure computer system or in locked filing cabinets at Cardiff University which can only be accessed by the research team. All information is kept for 5 years and then deleted after this time.

The research project is being completed as part of a university course and will be written up into a report. The information may also be used for teaching/training. In any report or presentation, it will not be possible to identify which students took part or to link any student to their questionnaire responses.

What can I do if I have concerns about the research project?

You can speak to a member of the research team. They can be contacted by email or phone: SamuelV3@cardiff.ac.uk, 02920 870582. You can also tell a member of school staff or your parent/carer if you have any worries about the research project, and they will let us know.

Who has reviewed the study?

The research project has been approved by Cardiff University School of Psychology ethics committee. They have checked the study to ensure we are running it in a way which protects your rights and your safety.

If you have any questions relating to ethical issues and how this study is reviewed to ensure the well-being of the individuals who participate, please contact the Cardiff University School of Psychology Ethics Committee:

School of Psychology Research Ethics Committee

Email: psychethics@cardiff.ac.uk

Tel: 029 20870360

The data controller is Cardiff University and the Data Protection Officer is Matt Cooper CooperM1@cardiff.ac.uk. The lawful basis for the processing of the data you provide is consent.

Appendix H: Student consent form

Please confirm each statement by ticking the box:

1. I have read the information sheet and have had the opportunity to ask questions.
2. I am happy to complete questionnaires to help evaluate the workshops.
3. I understand that I am free to stop completing the questionnaires at any time.
4. I understand that the information I share will be confidential (only shared with the research team) and will be made anonymous when it is used to write up the findings of the research study. This means that it will not be possible to tell what students have taken part.
5. I understand that the information I share will be kept by the research team for up to five years when it will be deleted. I understand that I can ask for the information I share to be deleted up to 1 week after I complete the last questionnaires, and I can have access to the information at any time.
6. I understand that the information I share may be used in a published paper and for teaching or training (outside of my school). I understand that it will not be possible to tell that I have taken part by the information included.
7. I understand that if my responses on the questionnaires show that I am very distressed or upset, the research team will need to report this to school staff using my unique number.
8. I am happy for the workshops I attend to be audio recorded (sound but no video) so that the researchers can look at how well the two people delivering the workshops follow the training they have had. *(This statement will only appear on the consent form for the intervention group).*

The data controller is Cardiff University and the Data Protection Officer is Matt Cooper CooperM1@cardiff.ac.uk. The lawful basis for the processing of the data you provide is consent.

Appendix I: Student debrief

Study: Evaluating a three-session resilience workshop for secondary school students (InTER-ACT2).

Thank you

Thank you for participating in this research study. The information you have provided will help us to see if short workshops for secondary school students are useful and practical to run in schools. We will use this information to help us plan for future groups within schools in a way which may hopefully help young people to reduce their feelings of stress and build resilience. We appreciate the time you have given to the research project.

Data protection

The school will continue to keep a record of your unique identifying numbers for the next month. This allows us to inform the school if your questionnaire responses lead us to think that you are experiencing significant distress.

You can request to have your information withdrawn from the study up until 1 week from when you completed the last questionnaires. You can do this by contacting the research team and letting us know your unique identifying number. After this time the database of unique identifying numbers will be deleted but we will continue to store your responses from the questionnaires. This information will be confidential and will be stored on password protected databases or in locked filing cabinets at Cardiff University. After 5 years this information will be deleted entirely.

Contact details

If you would like any further information or have any questions, please contact us using the information below.

Aless Roberts Trainee Clinical Psychologist robertsa31@cardiff.ac.uk	Laura Knight Trainee Clinical Psychologist Knightl5@cardiff.ac.uk	Dr Victoria Samuel Senior Research Tutor SamuelV3@cardiff.ac.uk	Dr Chloe Constable Clinical Psychologist Chloe.constable@nhs.net
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02920 870582 School of Psychology, Cardiff University Tower Building, 70 Park Place Cardiff CF10 3AT	02920 870582 School of Psychology, Cardiff University Tower Building, 70 Park Place Cardiff CF10 3AT	02920 870582 School of Psychology, Cardiff University Tower Building, 70 Park Place Cardiff CF10 3AT	CAMHS, 2gether NHS Foundation Trust, England
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If you have any questions relating to ethical issues and how this study is reviewed to ensure the well-being of the students who participated, please contact the Cardiff University School of Psychology Ethics Committee:

School of Psychology Research Ethics Committee

Email: psychethics@cardiff.ac.uk Tel: 029 20870360

The data controller is Cardiff University and the Data Protection Officer is Matt Cooper CooperM1@cardiff.ac.uk. The lawful basis for the processing of the data you provide is consent.

Appendix J: The Short Warwick-Edinburgh Mental Wellbeing Scale



The Short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS)

Below are some statements about feelings and thoughts.
Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5

Appendix K: Revised Children's Anxiety and Depression Scale (RCADS-25)

Date: _____

Name/ID: _____

RCADS-25

Please put a circle around the word that shows how often each of these things happens to you. There are no right or wrong answers.

1. I feel sad or empty	Never	Sometimes	Often	Always
2. I worry when I think I have done poorly at something	Never	Sometimes	Often	Always
3. I would feel afraid of being on my own at home	Never	Sometimes	Often	Always
4. Nothing is much fun anymore	Never	Sometimes	Often	Always
5. I worry that something awful will happen to someone in my family	Never	Sometimes	Often	Always
6. I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds)	Never	Sometimes	Often	Always
7. I worry what other people think of me	Never	Sometimes	Often	Always
8. I have trouble sleeping	Never	Sometimes	Often	Always
9. I feel scared if I have to sleep on my own	Never	Sometimes	Often	Always
10. I have problems with my appetite	Never	Sometimes	Often	Always
11. I suddenly become dizzy or faint when there is no reason for this	Never	Sometimes	Often	Always
12. I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	Never	Sometimes	Often	Always
13. I have no energy for things	Never	Sometimes	Often	Always
14. I suddenly start to tremble or shake when there is no reason for this	Never	Sometimes	Often	Always
15. I cannot think clearly	Never	Sometimes	Often	Always
16. I feel worthless	Never	Sometimes	Often	Always
17. I have to think of special thoughts (like numbers or words) to stop bad things from happening	Never	Sometimes	Often	Always
18. I think about death	Never	Sometimes	Often	Always
19. I feel like I don't want to move	Never	Sometimes	Often	Always
20. I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	Never	Sometimes	Often	Always
21. I am tired a lot	Never	Sometimes	Often	Always
22. I feel afraid that I will make a fool of myself in front of people	Never	Sometimes	Often	Always
23. I have to do some things in just the right way to stop bad things from happening	Never	Sometimes	Often	Always
24. I feel restless	Never	Sometimes	Often	Always
25. I worry that something bad will happen to me	Never	Sometimes	Often	Always

Appendix L: Perceived Stress Scale (PSS-4)

Perceived Stress Scale 4 (PSS-4)

INSTRUCTIONS

The questions in this scale ask you about your feelings and thoughts during THE LAST MONTH. In each case, please indicate your response by placing an "X" over the square representing HOW OFTEN you felt or thought a certain way.

	Never 0	Almost Never 1	Sometimes 2	Fairly Often 3	Very Often 4
1. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. In the last month, how often have you felt that things were going your way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scoring for the Perceived Stress Scale 4:**Questions 1 and 4**

0 = Never

1 = Almost Never

2 = Sometimes

3 = Fairly Often

4 = Very Often

Questions 2 and 3

4 = Never

3 = Almost Never

2 = Sometimes

1 = Fairly Often

0 = Very Often

Lowest score: 0

Highest score: 16

Higher scores are correlated to more stress.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.

Appendix M: Child Acceptance and Mindfulness Measure (CAMM)

Child and Adolescent Mindfulness Measure (CAMM)

We want to know more about what you think, how you feel, and what you do. **Read** each sentence. Then, circle the number that tells **how often** each sentence is true for you.

	Never True	Rarely True	Sometimes True	Often True	Always True
1. I get upset with myself for having feelings that don't make sense.	0	1	2	3	4
2. At school, I walk from class to class without noticing what I'm doing.	0	1	2	3	4
3. I keep myself busy so I don't notice my thoughts or feelings.	0	1	2	3	4
4. I tell myself that I shouldn't feel the way I'm feeling.	0	1	2	3	4
5. I push away thoughts that I don't like.	0	1	2	3	4
6. It's hard for me to pay attention to only one thing at a time.	0	1	2	3	4
7. I get upset with myself for having certain thoughts.	0	1	2	3	4
8. I think about things that have happened in the past instead of thinking about things that are happening right now.	0	1	2	3	4
9. I think that some of my feelings are bad and that I shouldn't have them.	0	1	2	3	4
10. I stop myself from having feelings that I don't like.	0	1	2	3	4

Appendix N: Patient Reported Experience Measure

Each question will ask the young person to rate their response on a 5-point Likert scale (1-strongly disagree, 2-disagree, 3-not sure, 4-agree, 5-strongly agree):

1. I will use the skills learnt in the workshops in my everyday life.
2. It was easy to understand the topics discussed.
3. I feel better able to do things that are important to me, even if difficult thoughts or feelings are there.
4. I found the questionnaires easy to complete.

Please choose the response that best fits your answer.

5. Thinking about the number of workshops, do you think there were:
 - a. Not enough
 - b. About the right number
 - c. Too many
6. Please tell us what you thought was good about the workshops? (If anything)

Free text

7. Please tell us if you think we should have done anything different in the workshops?

Free text

8. Please add any other comments if you would like to

Free text