

## ORIGINAL ARTICLE

# Enhancing students' well-being with a unified approach based on contextual behavioural science: A randomised experimental school-based intervention

Juanjo Macías<sup>1</sup>  | Károly K. Schlosser<sup>2</sup> | Frank W. Bond<sup>3</sup>  |  
María J. Blanca<sup>4</sup>  | Luis Valero-Aguayo<sup>5</sup> 

<sup>1</sup>Faculty of Health Sciences, Catholic University of San Antonio of Murcia, Murcia, Spain

<sup>2</sup>Institute of Psychiatry, Psychology & Neuroscience, Kings College London, University of London, London, UK

<sup>3</sup>Institute of Management Studies, London University, Goldsmiths, London, UK

<sup>4</sup>Department of Psychobiology & Methodology of Behavioral Sciences of the Faculty of Psychology, University of Málaga, Málaga, Spain

<sup>5</sup>Department of Personality, Assessment and Psychological Treatment of the Faculty of Psychology, University of Málaga, Málaga, Spain

## Correspondence

Luis Valero-Aguayo, Faculty of Psychology, University of Málaga, Campus Teatinos, 29071 Málaga, Spain.  
Email: [lvalero@uma.es](mailto:lvalero@uma.es)

[Correction added on August 30, 2022, after first online publication: The copyright line was changed.]

## Abstract

A new generation of interventions has begun to move towards principles of acceptance that deal with the context and function of psychological events. The aim of this paper is to analyse the effectiveness of a brief contextual behavioural intervention to improve the psychological well-being of secondary school students. This intervention represents a unified model with key processes based on contextual behavioural science, including Acceptance and Commitment Therapy (ACT) and Functional Analytic Psychotherapy (FAP). We conducted an intervention with 94 students (age range 17–19 years), randomly assigned to an experimental group ( $n = 50$ ) or control group ( $n = 44$ ). Participants took a pretest and post-test of distress, life satisfaction, psychological flexibility and mindfulness. The intervention consisted of three sessions of 1 h each. The results showed significant differences between the groups in distress and significant differences for the interaction (group  $\times$  pre–post) in all the other variables. The intervention had greater benefits for girls than for boys. These results may provide a breakthrough, thus leading to a process of evidence-based

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2022 The Authors. Applied Psychology: Health and Well-Being published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

therapies, which would be responsible for inducing psychological improvements in brief periods, in a population with an increasing risk of distress.

#### KEYWORDS

brief intervention, contextual behavioural science, students, well-being

## INTRODUCTION

Students spend much of their time in their classroom, and therefore, schools have the potential to exert a powerful influence on their psychological well-being. Over the last few decades, preventive interventions have been promoted to foster students' well-being. The need of interventions is supported by epidemiological research that has documented excessive levels of psychological issues in young people (Duffy et al., 2019; Global Burden of Disease, 2018; Zuberi et al., 2021). Indeed, the prevalence of psychological distress is increasing among the student population (Center for Collegiate Mental Health, 2016) and is higher among females than males (Nurullah, 2010). There is a strong link between students' distress and their ability to learn (Takahashi et al., 2020; Werner-Seidler et al., 2017). Other authors have concluded that the majority of distress is due to the absence of skills that are required to manage emotions (Durlak et al., 2011; Edwards et al., 2001). Given these circumstances, there is a need to develop strategies for improving skills within the academic arena, which could alleviate the adverse effects of psychological distress on students, as well as its impact on other related variables.

Contextual behavioural science (CBS) is a coherent, multilevel system of philosophical assumptions, scientific values and methodological commitments that drive theory and technology development (Hayes et al., 2012; Zettle et al., 2016). Furthermore, this is the research paradigm underlying both Acceptance and Commitment Therapy (ACT) and Functional Analytic Psychotherapy (FAP). Both therapies are considered to be transdiagnostic models because they understand the human being from a functional standpoint that goes far beyond the usual psychopathological diagnosis. Instead, the 'treat syndromes' principle is a way of targeting an expanded range of processes of change, such as: acceptance, values, and cognition (Hayes, 2019; Hayes et al., 2006, 2012; Timimi, 2014). These approaches belong to the philosophical assumptions of CBS, which assume that human suffering is common to human nature, both in people experiencing clinical conditions or general health problems and in normative populations. Thus, this contextual model addresses the common processes that may be involved in different diagnoses, rather than focusing on the underlying symptoms or disorders of each diagnosis.

On the one hand, ACT focuses on the processes of psychological flexibility that would allow people to adapt to their real circumstances, manage language and live according to their values in the present moment, whereas, FAP provides a context of therapeutic interaction, applying natural contingencies to modify the behaviour through living a meaningful life. For example, in using these principles to obtain perspective about unpleasant thoughts and the commitment to values (academic performance), mindfulness can be included without moving away from the Skinnerian principles of learning (i.e. extinction of rumination, differential reinforcement, contact with the present moment and positive reinforcement) in a psychological way and with educational pedagogy implications.

Combining FAP and ACT integrates the strengths of both, concentrating the core processes of change through language and direct experiences in session. Studies of this FAP–ACT hybrid are common in the literature (Callaghan et al., 2004; Macías & Valero, 2021; Macías et al., 2019), creating a broader and more comprehensive therapy, while remaining theoretically consistent and aligned with the goals of each therapy. This combination is rooted in the behavioural tradition and also in advanced functional analysis, as a procedure for applying these contextual principles to multiple situations. Several authors have advocated the utility of combining both approaches in various clinical conditions (Luciano et al., 2009; Tsai et al., 2009).

Evidence-based applications of these contextual therapies have yielded positive results in a wide range of clinical conditions, using both ACT (A-Tjak et al., 2015; Hayes, 2019; Hayes et al., 2006) and FAP (Kanter et al., 2017; Mangabeira et al., 2012), with a combination of these approaches (Macías & Valero, 2021; Macías et al., 2019). Furthermore, it is possible to include mindfulness because this is an effective way of capturing the attention of students. Mindfulness has become a trend around the world, which is partly influenced by admired celebrities practicing mindfulness. Moreover, in academic contexts, the FAP–ACT hybrid has been useful in improving student life satisfaction and school achievement (Cattivelli et al., 2014; Dray et al., 2017; Keogh et al., 2006). This methodology also improves the effectiveness of the intervention, by expanding the goal of the therapy to include clinically relevant behaviours, using the therapeutic relationship as a mechanism of change and functional generalisation, by extending the improvements that are induced in the classroom to other areas of students' lives to provide long-term maintenance.

More specifically, FAP offers the context to promote change by modifying natural contingencies (i.e. increase positive reinforcement) through an intense therapeutic relationship that is based on behavioural principles (i.e. operant and classical conditioning), and ACT allows students to work with perspective-taking and value-based methods in a simple way (Dixon et al., 2020). This combination has been shown to be innovative in the school setting because it allows for unifying the strengths of both models (Callaghan et al., 2004) and producing changes in relatively short periods of time about two or more sessions (Bryan et al., 2012). We incorporated our previous research, together with some other meta-analyses on the use of contextual therapies in adolescents (Gillard et al., 2018; Macías & Valero, 2021; Swain et al., 2015).

To extend the findings that have been obtained with the combination of the two models to other environments, this study aimed to confirm its effectiveness with a brief contextual intervention designed to improve the psychological well-being of secondary school students. Specifically, we expected that the benefits of contextual therapies would also extend to students, thus decreasing stress and increasing satisfaction and psychological flexibility. The programme provides the necessary skills and also acts as a resource or coping philosophy to 'vaccinate' students against dysfunctional behavioural repertoires that can potentially promote difficulties in their psychological well-being.

To the best of our knowledge, this study represents the first attempt to extend this programme, to achieve positive outcomes in an academic setting using a brief and group-based format. The aim of this model is to integrate CBS principles in a simple way taking into account the understanding and intervention adherence of adolescents, through different videos and demonstrations in the classroom. Promoting the well-being of students could increase their ability to cope with the high rates of distress and the challenges they face during this critical period of their development.

## METHOD

### Participants

The participants belonged to three state-funded secondary schools, located in Malaga, southern Spain, all of whom voluntarily agreed to participate in this programme, with the aim of improving the psychological well-being of students. The secondary school head teacher requested the implementation of our training skills to reduce the levels of psychological distress in students, and the parents' council approved the presented programme. All of the participants of the three secondary schools were in the academic year that precedes entry into University, all had similar socio-economic status, the age range was 17–19 years, and all attended all of the sessions, thus showing the maximum rate of adherence to the intervention programme. The total number of participants (94 students: 48 females and 46 males) was entered into a quasirandom assignment to control and experimental groups, according to the alphabetical order of their surnames. From the class list, one student belonged to the control group, and the next student belonged to the experimental group, and this recurring pattern of selection was applied to the whole class. In the experimental group, there were 50 participants (28 females and 22 males), and in the control group, there were 44 participants (20 females and 24 males). The inclusion criteria for the study were that the participants performed at least two of the three sessions and that their participation was voluntary, because anyone could benefit from an effective intervention. The retention rate was 100 per cent, because the intervention was performed during secondary school hours; hence, no data or participants were lost in the analysis of the data.

### Design

A pretest–post-test design was employed with a control group and random assignment of two conditions: one experimental group with ACT plus functional analytic strategies and the other to the control group. All of the participants completed the questionnaires before and after the intervention, and the control group was evaluated at a similar time as when the intervention took place. The sample was equally distributed across the three schools where the study was conducted. Within each class, the participants were randomly split between the control group and an experimental group. Pretests were given at the same time, and then, the post-tests were applied after the intervention.

### Instruments

For quantitative analysis, several questionnaires were used to evaluate the elements of general well-being (distress, life satisfaction, psychological flexibility and mindfulness) that were the targets of the protocol (Table 1). The mindfulness variable was added, because this has been shown to correlate with self-regulatory behaviour, positive emotions and physical and psychological well-being (Smith et al., 2019) and it was the gateway to introducing and adding complex processes of change. The following questionnaires were used:

*General Health Questionnaire-12* (GHQ-12; Goldberg, 1978). This scale is a 12-item self-report questionnaire that measures psychological distress. Items are graded using a 4-point scale from *better than usual* to *much less than usual*. A Likert-type scale was used (0, 1, 2, 3). The

**TABLE 1** Principles, examples and exercises applied in the experimental programme bases on contextual therapies

**Programme based on contextual behavioural science (CBS) with the main activities**

1. Programme benefits to promote intervention adherence and motivate students (EO). Building empathy, awareness, courage, love and behaviourism (ACL model of FAP).
2. Self-disclosures, shaping and modelling towards target behaviours.
3. Emphasis on the therapeutic alliance, emotional validation and positive reinforcement. Confidential and safe atmosphere within the group: groupal activity.
4. Language as the source of human suffering. Unpleasant thoughts versus values.
5. Functional group analysis (Table 2).
6. Evoke problem behaviour and differentially reinforce target behaviours with multiple examples.
7. Creative hopelessness. Metaphor: 'Quicksands' and 'Welcome to all and the rude'. Video: 'Fallin' Floyd'.
8. Control as the problem. Exercises: 'Pink Elephant' and 'Forget the numbers: 1,2,3'.
9. Self as context. Metaphor: 'Chessboard', 'The radio', 'Two pc's', 'Thank your mind' and 'Passenger on the bus'.
10. Clarification of values (meaningful life) and commitment. Differences between values, actions and aims. Metaphors: 'Birth' and 'Garden'. Video: 'Jack Sparrow and his compass' (Commitment with study and their gardens).
11. Brief recapitulation of the last session. Clarification of values and acting with barriers. Metaphor: 'Demons on the boat'.
12. Defusion. Exercises: I notice that I'm having the thought that; 'Leaves on a stream', 'Repetition: Lemon' and 'Text messages on your mobile phone'.
13. Perspective taking (hierarchical deictic relations and distinction). Homer Simpson and Autopilot. Acceptance and observing exercise: 5 min of present moment and attention to breathing. Video: 'Celebrities and mindfulness'.
14. Relapse prevention. Metaphor: 'The rider', 'Japanese Bamboo', 'The mud' and 'Sticky notes'.
15. Home practice assignments seeking functional generalisation and functional interpretation. Acting with barriers (thoughts and feelings) towards values. Awareness in daily life and physicalisation.

*Note:* EO (establishing operation): Increases the current effectiveness of certain stimuli, objects or events as reinforcement. This table presents the main activities used to promote the changes. They include role plays, videos, metaphors, home assignments and examples. It is not a protocol or a recipe, they are only processes that allow changes to be produced and their flexibility allows to adjust it to each context for better outcomes.

higher scores on this questionnaire indicate higher levels of psychological distress. A cut-off point of 12 is considered to be the limit for presenting a risk of distress (Hardy et al., 2003). The Cronbach's alpha coefficient on this scale for the current study was .76.

*Satisfaction with Life Scale* (SWLS; Diener, 2009). This scale is a five-item questionnaire that is designed to measure satisfaction with life. Participants indicate the extent to which they agree or disagree with each item, using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores on this questionnaire are taken to indicate greater life satisfaction. The Cronbach's alpha coefficient of this scale for the current study was .83.

*Acceptance and Action Questionnaire II* (AAQ-II; Bond et al., 2011). This scale is a seven-item Likert-type self-report questionnaire that was created to measure psychological flexibility. This scale provides a total score and assesses experiential avoidance and psychological acceptance, which are key aspects of ACT. This instrument contains seven items rated from 1 (*never*) to 7 (*always*). Higher scores indicate lower levels of psychological flexibility. The Cronbach's alpha coefficient for the current study was .88.

TABLE 2 Students group functional analysis of their behaviour problems

Internal events	How do I cope?	Consequences
Fear	Sleep	<i>Short term:</i>
'I am going to fail'	Drink alcohol	Rf+ Control and relief
I am not good enough	Pills	Rf+ Following verbal rules
'I cannot do it'	Stay at home	('I have to remove this unpleasant
'I am idiot'	Play videogames	thought')
'The others are better than me'	Use the mobile phone	Rf- Avoidance
Distress	Isolate	<i>Long term:</i>
Anxiety	Do not study	It does not work
Laziness	Procrastinate	Boomerang effect
Shame	Lie	
Apathy	Do not speak	
Guilt	Watch Netflix and YouTube	
	Other avoidance behaviours	

*Five Facets Mindfulness Questionnaire* (FFMQ; Baer et al., 2006). This scale is the most widely used internationally to measure mindfulness and consists of 39 elements to assess five facets of mindfulness (observing, describing, acting with awareness, nonreactivity and non-judging). The items are rated from 1 (*never or very rarely true*) to 5 (*very often or always true*). The scores on this questionnaire show a negative association with depression, anxiety and stress. The Cronbach's alpha coefficients for the current study were .70 (nonreactivity), .82 (observing), .77 (acting with awareness), .76 (describing), and .71 (nonjudging).

Participants filled out paper questionnaires, and the data were then manually entered into a database for analysis by two of the researchers.

## Procedure

Three secondary schools were invited to take part in the study, to promote health in the academic environment, and they all accepted, with approval being obtained from the principal of each establishment. Approval for the study was also obtained from the corresponding Parents' Association. All parents were informed of the purpose of the study and the procedures, and no parents withheld their permission. Prior to any data collection, participants signed informed consent forms, which included a statement of the study objectives and confidentiality procedures. This study was approved by the Experimental Ethics Committee (47-2018-H), and all procedures were carried out in accordance with the Declaration of Helsinki.

The intervention was implemented in the same daily participation classroom, during a free 1-h time slot within their academic schedule. Each group session lasted about 60 min. The participants in each secondary school received the intervention across three group sessions (16, 17 and 17 students for each centre, respectively). The therapist was the same for all three groups and has 6 years of therapeutic experience under close supervision of experts in contextual psychotherapies.

All participants in the experimental group attended all three group sessions. The first two sessions took place on consecutive weeks, and the final session was held after an interval of

2 weeks. This latency period was used to practice the skills that were learned in the first two sessions. The intervention lasted 4 weeks, and post-test measures were completed just after the last session.

The programme was implemented using an adaptation of the '2 + 1' format (Barkham & Shapiro, 1990). This brief group intervention was based on strategies that were developed within the ACT framework by Wilson and Luciano (2002), including a short version of ACT, that was originally designed in the primary care field (Glover et al., 2016; Strosahl et al., 2012), and FAP (Tsai et al., 2009). All of these strategies were integrated to produce rapid changes (Macías et al., 2019). The intervention also presented the adoption of a stepped-care perspective: Quick interventions will not resolve the concerns for all students; however, the students could develop value-based intervention actions and acquire skills and resources with a focus towards additional care, if necessary. This brief ACT value-based intervention is an abridged version that distils the core methods (Table 1). In addition, we included mindfulness applications to introduce acceptance resources for coping with internal events. Readers are encouraged to consult the applications of the protocol at the workplace (Macías & Valero, 2021; Macías et al., 2019).

The philosophy of the intervention was to treat each session as if it were the last, inducing radical changes and promoting functional generalisation to other contexts (Table 1). The mindfulness variables were disguised by including more complex processes based on Relational Frame Theory (Hayes et al., 2001), such as fostering hierarchical frames, which may produce changes in how participants relate with their thoughts and sensations to promote discomfort acceptance and reduce the control of internal experiences; responding to processes of extinction; and differential reinforcement with perspective-taking exercises (i.e. to reduce overthinking). Mindfulness is an attractive way of introducing adolescents to the benefits of more in-depth practices. Other examples of modelling or mentoring (i.e. as per celebrities who practise mindfulness) were also used, such as adapting language to the background of adolescents with functional equivalences/examples, as they could memorise in a better way (i.e. using videogames, series and films metaphors). The central processes were avoidance results (creative hopelessness), acceptance of private experiences, promoting mindfulness, awareness, commitment to a meaningful life that is normally connected with the presence of unwanted private events and functional analysis (Table 2). During the initial session, we presented the benefits of the programme and what it promotes. We worked with the experiential avoidance and control as a problem (i.e. the unworkable results of emotion/thought suppression); we designed a functional group analysis session in the classroom with the students (Table 2) that incorporated the most common private events and the ways of coping with these events: clarification of values and commitment, creative hopelessness (i.e. consequences of struggle) and, finally, the self as context (i.e. acting with barriers). The second session focused on briefly summarising the previous session, which included exercises in defusion, promoting attention and awareness and the willingness to deal with unpleasantness (i.e. thoughts, sensations, feelings and emotions). For example, 'I'm not good enough', 'I am a loser', 'I am going to fail' (Table 2) and perspective taking through the participation in hierarchical frameworks with the deictic-self perspective (see Törneke et al., 2015). FAP was integrated into all exercises, in which the therapist promotes an intense and genuine therapeutic relationship (Maitland et al., 2017; Muñoz-Martínez & Follette, 2019), with all students carrying out personal self-revelation, with the purpose of being a mentor or model who is able to cope with difficulties in life, while considering the experiences which emerged during lectures, and shaping clinically relevant behaviours (i.e. problem behaviours) for others in a more flexible way. Problem behaviour was provoked in situ

(i.e. imagination/role play during the intervention), target behaviour was reinforced and functional generalisation and functional interpretation were promoted: *How can you extend these changes into your everyday life?* For example, *When laziness appears within me, and I immediately play video games, am I closer to the university or further away from it?* The objective of the final session was to promote commitment to a life based on values (such as studying for a degree, having more satisfactory social relationships and improving partner and family relationships). We worked on relapse prevention and the acceptance of discomfort. All group sessions included homework assignments that were related to the content of each session, along with exercises and metaphors, to produce functional generalisation in the students' daily lives.

The participants in the control group only completed the questionnaires, in the first and last session; also, they had about an hour to ask questions about the tests, but usually, they did not have any doubts.

## Data analysis

Our aim was to evaluate the effectiveness of this brief programme in the student population, so we hypothesised that psychological well-being variables (i.e. distress, life satisfaction, psychological flexibility and mindfulness) would improve after its implementation, as had occurred in other arenas (Macías & Valero, 2021; Macías et al., 2019). First, we made a one-factor ANOVA with all the variables in the preview measurement, to test the equality of both groups from the outset. Later, we conducted a series of ANOVA with repeated measures for two factors in all the variables. The pre–post scores were the within-subjects factor, and the group (experimental or control) was the intersubjects. Also, we made the same ANOVA with repeated measures considering the sex as intersubject factor, to find out if there was any difference between the sexes. The data were tested for normality using the Shapiro–Wilk test and for sphericity using the Mauchly test. The data analyses were conducted using SPSS 22.0 for Mac.

## RESULTS

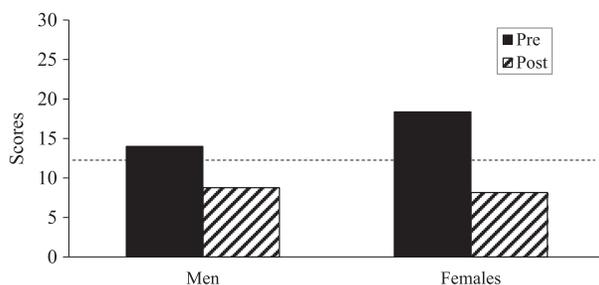
The initial comparison between the control and experimental groups showed no significant differences, indicating that the scores on the different questionnaires were similar at the start of the study with both groups.

The results of the ANOVA with repeated measures (2 groups  $\times$  2 measurements) are displayed in Table 3. In relation to distress of GHQ, significant effects were found for group and for the interaction (group  $\times$  pre–post), with a high effect size ( $\eta^2 = .885$ ). The experimental group showed lower scores on the post-test than the control group ( $M = 8.64$  vs.  $M = 15.75$ ) which could indicate a decrease in distress. The difference between the experimental and control groups was  $-10.22$  points for girls, whereas this was  $-5.2$  points for boys. Therefore, distress was less severe for girls when compared with boys. Figure 1 shows this difference about distress in GHQ-12, and it seems to indicate that females benefits more from the intervention.

Regarding life satisfaction with the SWLS, no significant effects of group were found, but the interaction group  $\times$  pre–post was significant, with large and medium effect size ( $\eta^2 = .948$ ). The experimental group showed higher scores on the post-test than the control group ( $M = 25.52$  vs.  $M = 22.11$ ). The difference between the experimental and control groups was

TABLE 3 Mean data of experimental and control group in pre-post measures and the ANCOVA of group and interaction effect

Variables	Control group		Experimental group		Group		Group × pre-post	
	Pre	Post	Pre	Post	F	p	F	$\eta^2$
Distress (GHQ-12)	16.00 (6.58)	15.75 (7.32)	17.26 (5.76)	8.64 (5.12)	7.28	.008	707.08	.001
Life satisfaction (SWLS)	23.75 (5.75)	22.11 (6.36)	23.02 (6.51)	25.52 (6.00)	1.34	.250	1669.56	.001
Psychological flexibility (AAQ-2)	22.41 (10.37)	21.64 (10.96)	24.48 (9.83)	20.70 (8.73)	0.097	.756	580.32	.001
Mindfulness (FFMQ)	117.52 (14.89)	118.23 (16.50)	115.78 (15.65)	125.76 (20.70)	0.817	.368	5550.96	.001
Observing	24.41 (5.51)	24.05 (5.73)	23.72 (5.74)	27.28 (5.63)	1.539	.218	2348.94	.001
Describing	24.39 (6.05)	24.55 (6.04)	24.20 (6.85)	26.02 (6.36)	0.290	.592	1715.22	.001
Acting with awareness	23.61 (5.88)	23.43 (6.61)	23.94 (5.53)	25.02 (4.68)	0.794	.375	1996.62	.001
Nonreactivity	20.50 (4.72)	20.66 (4.98)	19.74 (3.97)	21.00 (5.39)	0.063	.803	2395.29	.001
Nonjudging	24.61 (7.12)	25.55 (7.34)	24.18 (6.43)	26.44 (6.76)	0.033	.857	1564.10	.001



**FIGURE 1** Average in the GHQ-12 variables (men, M; and female, F), between the experimental group and the control group. The average females benefit more from the intervention. *Note:* The experimental group decreases scores below the cut-off point of 12 (distress)

5.88 points for girls, whereas this was 1.76 points for boys. Therefore, life satisfaction was higher for girls than for boys.

Also, psychological flexibility measured with AAQ-2 showed similar results, with no significant principal effects for groups, but significant for interaction with pre–post, and a high effect size ( $\eta^2 = .863$ ). Similar results were found for the total scores of mindfulness (FFMQ), and they were significant for the interaction groups  $\times$  pre–post factors. The analysis of the different scales of FFMQ repeated the same results with significance for the interaction, a large effect size and higher scores in the experimental group ( $M = 125.76$  vs.  $M = 118.23$ ). Specific data for each variable in the different groups and pre–post measurements can be found in Table 3.

## DISCUSSION

The aim of this study was to analyse the effectiveness of a brief contextual intervention that was designed to improve the psychological well-being of secondary school students. Evidence from previous studies has confirmed the effectiveness of this programme, with the combination of contextual therapies, when used in brief periods in the workplace (Macías et al., 2019; Macías-Morón & y Valero-Aguayo, 2021a, 2021b). We aimed to provide evidence of its efficacy in other contexts, specifically in the school setting with teenage students, who face rather different challenges from those of working adults. Our hypothesis was that in students, values, functional generalisation, therapeutic relationship, functional analysis (Table 2), closeness or intimacy, as proposed by Kuczynski et al. (2018), are all key processes for producing changes in the dependent variables, and it could underlie other mechanisms of change (Hayes & Hofmann, 2021; Hofmann et al., 2021) in that intervention.

In relation to distress, we found that the experimental group showed significantly lower scores on the post-test in comparison with the control group, indicating an improvement in psychological distress. This reduction yielded a mean of 8.47 points on the post-test, which is below the cut-off point of 12, or the limit for presenting a risk of distress (Hardy et al., 2003), while the control group had 16.18 points on the post-test, which is above the cut-off point and is taken to indicate the risk of presenting psychological problems.

With regard to the other variables (life satisfaction, psychological flexibility and mindfulness), there were no main effects of groups but of the interaction with measurement time. This could suggest that a longer intervention would be needed to produce higher changes in these scales. Previous research with ACT has shown a delayed longer term pattern of improvement that can be attributed in part, to a focus on greater acceptance and awareness of distress. Thus, the benefits appear to be more consistently observable in the long term (Luoma et al., 2012).

The results also revealed differences between girls and boys. First, girls compared with boys scored lower on distress and higher on life satisfaction. This finding is consistent with the results of previous studies showing that the prevalence of distress may be slightly higher in females than in males (Nurullah, 2010). Second, girls showed a greater improvement in both psychological distress and life satisfaction, indicating that the intervention had a greater benefit for girls than for boys. It is possible that girls are more able to take advantage of the intervention due to a greater capacity for self-reflection than boys during adolescence (Klimstra et al., 2009), and their distress scores were higher before the programme; therefore, they have the capacity to improve more than boys (Flaxman & Bond, 2010). It is also possible, however, that these results are due to a ceiling effect, that is, due to their higher baseline (pretest) scores, boys had a lesser potential for change than girls. Indeed, it has been suggested that low baseline levels of distress can obscure the observed impact of interventions on distress (Macías et al., 2019).

Overall, our results are congruent with those of previous research, indicating that two or more intervention sessions with brief protocols are sufficient to generate changes in people's psychological well-being (Bryan et al., 2012). These findings are also congruent with the results of a meta-analysis regarding the utility of contextual therapies in teenagers (Gillard et al., 2018; Swain et al., 2015). This study sought evidence that a short programme, with a focus on the core processes of contextual therapies, could be useful for students by integrating relevant processes (Hayes & Hofmann, 2017, 2019; Hofmann et al., 2021; Ong et al., 2020).

In spite of the positive results reported here, this study has certain limitations that should be considered. First, although we organised a waiting list control group for the intervention, this was finally not implemented due to problems with the secondary school schedule and the coordination of the final exam timetable. Thus, the control group did not receive the intervention, and the participants did not benefit from it due to organisational changes at the secondary school. Furthermore, the total sample can be considered small and would have limitations in its generalisability to other more diverse samples.

Second, the long-term monitoring of these results was not possible because students stopped attending classes to study for the university entrance exam, and thus, they could not be re-recruited. Therefore, it is not possible to draw any firm conclusions about the long-term results of this programme.

Finally, the intervention not only included ACT but also FAP and mindfulness components, and so all of the six key processes of ACTs were not strictly applied (e.g. the self as context, values or commitment to action were only partially worked on). Previous studies that strictly applied ACT processes reported changes in psychological flexibility (Hayes, 2019; Hayes et al., 2006).

We think this short three-session programme constitutes a promising starting point for developing interventions that can produce changes in short periods of time. We might be at a new departure point for creating generations of students with more flexible repertoires.

## ACKNOWLEDGEMENT

This study was carried out in Marbella (Spain), did not receive funding and was self-financed. Funding for open access charge: Universidad de Málaga / CBUA.

[Correction added on August 30, 2022, after first online publication: The preceding sentence has been added in this version.]

## CONFLICT OF INTEREST

The authors have no conflict of interest about this research.

## ETHICS STATEMENT

This study was approved by the Ethics Committee of the University of Malaga (N-467-47-2018-H).

## DATA AVAILABILITY STATEMENT

N/A.

## ORCID

Juanjo Macías  <https://orcid.org/0000-0002-3374-7712>

Frank W. Bond  <https://orcid.org/0000-0002-9986-732X>

Maria J. Blanca  <https://orcid.org/0000-0003-4046-9308>

Luis Valero-Aguayo  <https://orcid.org/0000-0003-0124-4966>

## REFERENCES

- A-Tjak, J. G., Davis, M. L., Morina, N., Powers, M. B., Smits, J. A., & Emmelkamp, P. M. (2015). A meta-analysis of the efficacy of acceptance and commitment therapy for clinically relevant mental and physical health problems. *Psychotherapy and Psychosomatics*, *84*, 30–36. <https://doi.org/10.1159/000365764>
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*, 27–45. <https://doi.org/10.1177/1073191105283504>
- Barkham, M., & Shapiro, D. A. (1990). Brief psychotherapeutic interventions for job-related distress: A pilot study of prescriptive and exploratory therapy. *Counselling Psychology Review*, *3*, 133–147. <https://doi.org/10.1080/0951507900854242>
- Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., & Zettle, R. D. (2011). Preliminary psychometric properties of the acceptance and action questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, *42*, 676–688. <https://doi.org/10.1016/j.beth.2011.03.007>
- Bryan, C. J., Corso, M. L., Corso, K. A., Morrow, C. E., Kanzler, K. E., & Ray-Sannerud, B. (2012). Severity of mental health impairment and trajectories of improvement in an integrated primary care clinic. *Journal of Consulting and Clinical Psychology*, *80*, 396. <https://doi.org/10.1037/a0027726>
- Callaghan, G. M., Gregg, J. A., Marx, B. P., Kohlenberg, B. S., & Gifford, E. (2004). FACT: The utility of an integration of functional analytic psychotherapy and acceptance and commitment therapy to alleviate human suffering. *Psychotherapy: Theory, Research, Practice, Training*, *41*, 195–207. <https://doi.org/10.1037/0033-3204.41.3.195>
- Cattivelli, R., Musetti, A., & Perini, S. (2014). L'approccio ACT-FAP nella promozione delle abilità sociali in adolescenti e preadolescenti con difficoltà emotive [The ACT-FAP training of social skills in adolescents and preteens with emotional difficulties. Psychology of the education]. *Psicologia dell'Educazione*, *8*, 97–112. <https://doi.org/10.1037/0033-3204.41.3.195>
- Center for Collegiate Mental Health. (2016). 2015 Annual Report. [https://sites.psu.edu/ccmh/files/2017/01/2016-Annual-Report-FINAL\\_2016\\_01\\_09-1gc2hj6.pdf](https://sites.psu.edu/ccmh/files/2017/01/2016-Annual-Report-FINAL_2016_01_09-1gc2hj6.pdf)
- Diener, E. D. (2009). Subjective well-being. In E. Diener (Ed.), *The science of well-being* (Vol. 37). Social Indicators Research Series. (pp. 11–25). Springer.

- Dixon, M. R., Hayes, S. C., Stanley, C., Law, S., & al-Nasser, T. (2020). Is Acceptance and Commitment Training or Therapy (ACT) a method that applied behavior analysts can and should use? *The Psychological Record*, 70, 559–579. <https://doi.org/10.1007/s40732-020-00436-9>
- Dray, J., Bowman, J., Campbell, E., Freund, M., Wolfenden, L., Hodder, R. K., McElwaine, K., Tremain, D., Bartlem, K., Bailey, J., Small, T., Palazzi, K., Oldmeadow, C., & Wiggers, J. (2017). Systematic review of universal resilience-focused interventions targeting child and adolescent mental health in the school setting. *Journal of the American Academy of Child & Adolescent Psychiatry*, 56(10), 813–824. <https://doi.org/10.1016/j.jaac.2017.07.780>
- Duffy, M. E., Twenge, J. M., & Joiner, T. E. (2019). Trends in mood and anxiety symptoms and suicide-related outcomes among US undergraduates, 2007–2018: Evidence from two national surveys. *Journal of Adolescent Health*, 65(5), 590–598. <https://doi.org/10.1016/j.jadohealth.2019.04.033>
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432. <https://doi.org/10.1111/j.1467-8624.2010.01564.x>
- Edwards, K. J., Hershberger, P. J., Russell, R. K., & Market, R. J. (2001). Stress, negative social exchange, and health symptoms in university students. *Journal of American College Health*, 50, 75–79. <https://doi.org/10.1080/07448480109596010>
- Flaxman, P. E., & Bond, F. W. (2010). A randomised worksite comparison of acceptance and commitment therapy and stress inoculation training. *Behaviour Research and Therapy*, 48(8), 816–820. <https://doi.org/10.1016/j.brat.2010.05.004>
- Gillard, D., Flaxman, P., & Hooper, N. (2018). Acceptance and Commitment Therapy: Applications for educational psychologists within schools. *Educational Psychology in Practice*, 34(3), 272–271. <https://doi.org/10.1080/02667363.2018.1446911>
- Global Burden of Disease Collaborative Network. (2018). *Global Burden of Disease Study 2017 (GBD 2017) results*. Institute for Health Metrics and Evaluation.
- Glover, N. G., Sylvers, P. D., Shearer, E. M., Kane, M. C., Clasen, P. C., Epler, A. J., & Jakupcak, M. (2016). The efficacy of Focused Acceptance and Commitment Therapy in VA primary care. *Psychological Services*, 13, 156–161. <https://doi.org/10.1037/ser0000062>
- Goldberg, D. P. (1978). *Manual of the General Health Questionnaire*. NFER Nelson.
- Hardy, G. E., Woods, D., & Wall, T. D. (2003). The impact of psychological distress on absence from work. *Journal of Applied Psychology*, 88, 306–314. <https://doi.org/10.1037/0021-9010.88.2.306>
- Hayes, S. C. (2019). Acceptance and commitment therapy: Towards a unified model of behavior change. *World Psychiatry*, 18(2), 226–227. <https://doi.org/10.1002/wps.20626>
- Hayes, S. C., Barnes-Holmes, D., & Roche, B. (2001). *Relational Frame Theory: A post-Skinnerian account of human language and cognition*. Kluwer Academic/Plenum Publishers.
- Hayes, S. C., Barnes-Holmes, D., & Wilson, K. G. (2012). Contextual behavioral science: Creating a science more adequate to the challenge of the human condition. *Journal of Contextual Behavioral Science*, 1(1–2), 1–16. <https://doi.org/10.1016/j.jcbs.2012.09.004>
- Hayes, S. C., & Hofmann, S. G. (2017). The third wave of cognitive behavioral therapy and the rise of process-based care. *World Psychiatry*, 16(3), 245. <https://doi.org/10.1002/wps.20442>
- Hayes, S. C., & Hofmann, S. G. (2019). Focusing on the correct level of analysis in process-based therapy. *Clinical Psychological Science: A Journal of the Association for Psychological Science*, 7(2), 189. <https://doi.org/10.1177/2167702618818433>
- Hayes, S. C., & Hofmann, S. G. (2021). “Third-wave” cognitive and behavioral therapies and the emergence of a process-based approach to intervention in psychiatry. *World Psychiatry*, 20(3), 363–375.
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes, and outcomes. *Behaviour Research and Therapy*, 44, 1–25. <https://doi.org/10.1016/j.brat.2005.06.006>
- Hofmann, S. G., Hayes, S. C., & Lorscheid, D. N. (2021). *Learning process-based therapy: A skills training manual for targeting the core processes of psychological change in clinical practice*. New Harbinger Publications.
- Kanter, J. W., Manbeck, K., Kuczynski, A. M., Maitland, D. M., Villas-Bôas, A., & Reyes, M. (2017). A comprehensive review of research on functional analytic psychotherapy. *Clinical Psychology Review*, 58, 141–156. <https://doi.org/10.1016/j.cpr.2017.09.010>

- Keogh, E., Bond, F. W., & Flaxman, P. E. (2006). Improving academic performance and mental health through a stress management intervention: Outcomes and mediators of change. *Behaviour Research and Therapy*, 44(3), 339–357. <https://doi.org/10.1016/j.brat.2005.03.002>
- Klimstra, T. A., Hale, W. W. III, Raaijmakers, Q. A. W., Branje, S. J. T., & Meeus, W. H. J. (2009). Maturation of personality in adolescence. *Journal of Personality and Social Psychology*, 96, 898–912. <https://doi.org/10.1037/a0014746>
- Kuczynski, A. M., Kanter, J. W., Wetterneck, C. T., Olaz, F. O., Singh, R. S., Lee, E. B., Stowe, T., Mazzucchelli, T. G., Mier-Chairez, J., Maitland, D. W. M., Manbeck, K. E., & Corey, M. D. (2018). Measuring intimacy as a contextual-behavioral process: Psychometric development and evaluation of the Awareness, Courage, and Responsiveness Scale. *Journal of Contextual Behavioral Science*, 16, 199–208. <https://doi.org/10.1016/j.jcbs.2019.02.004>
- Luciano, M. C., Valdivia-Salas, S., Gutiérrez-Martínez, O., Ruiz, F., & Páez, M. (2009). Brief acceptance-based protocols applied to the work with adolescents. *International Journal of Psychology and Psychological Therapy*, 9(2), 237–257.
- Luoma, J. B., Kohlenberg, B. S., Hayes, S. C., & Fletcher, L. (2012). Slow and steady wins the race: A randomized clinical trial of acceptance and commitment therapy targeting shame in substance use disorders. *Journal of Consulting and Clinical Psychology*, 80, 43–53. <https://doi.org/10.1037/a0026070>
- Macías, J., Valero-Aguayo, L., Bond, F. W., & Blanca, M. J. (2019). The efficacy of functional-analytic psychotherapy and acceptance and commitment therapy (FACT) for public employees. *Psicothema*, 31(1), 24–29. <https://doi.org/10.7334/psicothema2018.202>
- Macías, J., & Valero, L. (2021). Fundamentos y aplicaciones clínicas de FACT: Una intervención para abordar el sufrimiento humano a través de las terapias contextuales [Foundations and clinical application of FACT: An intervention to address human suffering through contextual therapies]. Madrid: Pirámide.
- Macías-Morón, J. J., & y Valero-Aguayo, L. (2021a). Programa de intervención breve basado en las terapias contextuales para mejorar el bienestar psicológico en el entorno organizacional [Brief intervention programme based on contextual therapies to improve psychological well-being in the organisational environment]. *Ansiedad y Estrés*, 27, 178–184. <https://doi.org/10.5093/anyes2021a23>
- Macías-Morón, J. J., & y Valero-Aguayo, L. (2021b). La utilidad de la integración de la Psicoterapia Analítica y la Terapia de Aceptación y Compromiso (FACT) para mejorar el estrés laboral: Dos estudios de caso [The usefulness of integrating Analytical Psychotherapy and Acceptance and Commitment Therapy (ACT) to improve work-related stress: Two case studies]. *Análisis y Modificación de Conducta*, 47(175), 133–146. <https://doi.org/10.33776/amc.v47i175.4803>
- Maitland, D. W., Kanter, J. W., Manbeck, K. E., & Kuczynski, A. M. (2017). Relationship science informed clinically relevant behaviors in functional analytic psychotherapy: The awareness, courage, and love model. *Journal of Contextual Behavioral Science*, 6(4), 347–359. <https://doi.org/10.1016/j.jcbs.2017.07.002>
- Mangabeira, V., del Prette, G., & Kanter, J. (2012). Functional analytic psychotherapy: A review of publications from 1990 to 2010. *International Journal of Behavioral Consultation and Therapy*, 7(2–3), 78–89. <https://doi.org/10.1037/h0100941>
- Muñoz-Martínez, A. M., & Follette, W. C. (2019). When love is not enough: The case of therapeutic love as a middle-level term in functional analytic psychotherapy. *Behavior Analysis: Research and Practice*, 19(1), 103–113. <https://doi.org/10.1037/bar0000141>
- Nurullah, A. S. (2010). Gender differences in distress: The mediating influence of life stressors and psychological resources. *Asian Social Science*, 6(5), 27. <https://doi.org/10.5539/ass.v6n5p27>
- Ong, C. W., Levin, M. E., & Twohig, M. P. (2020). Beyond acceptance and commitment therapy: Process-based therapy. *The Psychological Record*, 70, 637–648. <https://doi.org/10.1007/s40732-020-00397-z>
- Smith, P., Leeming, E., Forman, M., & Hayes, S. C. (2019). From form to function: Values and committed action strengthen mindful practices with context and direction. *Journal of Sport Psychology in Action*, 10(4), 227–234. <https://doi.org/10.1080/21520704.2018.1557773>
- Strosahl, K., Robinson, P., & Gustavsson, T. (2012). *Brief interventions for radical change: Principles & practice of focused acceptance & commitment therapy*. New Harbinger Publications.
- Swain, J., Hancock, K., Dixon, A., & Bowman, J. (2015). Acceptance and Commitment Therapy for children: A systematic review of intervention studies. *Journal of Contextual Behavioral Science*, 4(2), 73–85. <https://doi.org/10.1016/j.jcbs.2015.02.001>

- Takahashi, F., Ishizu, K., Matsubara, K., Ohtsuki, T., & Shimoda, Y. (2020). Acceptance and commitment therapy as a school-based group intervention for adolescents: An open-label trial. *Journal of Contextual Behavioral Science*, 16, 71–79. <https://doi.org/10.1016/j.jcbs.2020.03.001>
- Timimi, S. (2014). No more psychiatric labels: Why formal psychiatric diagnostic systems should be abolished. *International Journal of Clinical and Health Psychology*, 14(3), 208–215. <https://doi.org/10.1016/j.ijchp.2014.03.004>
- Törneke, N., Luciano, C., Barnes-Holmes, Y., & Bond, F. W. (2015). RFT for clinical practice: Three core strategies in understanding and treating human suffering. In R. D. Zettle, S. C. Hayes, D. Barnes-Holmes, & A. Biglan (Eds.), *The Wiley handbook of contextual behavioral science* (pp. 254–272). Wiley.
- Tsai, M., Kohlenberg, R. J., Kanter, J. W., Kohlenberg, B., Follette, W. C., & Callaghan, G. M. (2009). *A guide to functional analytic psychotherapy: Awareness, courage, love and behaviorism*. Springer.
- Werner-Seidler, A., Perry, Y., Calear, A. L., Newby, J. M., & Christensen, H. (2017). School-based depression and anxiety prevention programs for young people: A systematic review and meta-analysis. *Clinical Psychology Review*, 51, 30–47. <https://doi.org/10.1016/j.cpr.2016.10.005>
- Wilson, K. G., & Luciano, M. C. (2002). *Terapia de Aceptación y Compromiso (ACT). Un tratamiento conductual orientado a los valores [Acceptance and commitment therapy (ACT). A behavioral treatment oriented to personal values]*. Pirámide.
- Zettle, R. D., Hayes, S. C., Barnes-Holmes, D., & Biglan, A. (2016). *The Wiley handbook of contextual behavioral science*. Wiley Blackwell.
- Zuberi, A., Waqas, A., Sadiq, N., Hossain, M., Rahman, A., Saeed, K., & Fuhr, D. (2021). Prevalence of mental disorders in the WHO Eastern Mediterranean Region: A systematic review and meta-analysis. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsy.2021.665019>

**How to cite this article:** Macías, J., Schlosser, K. K., Bond, F. W., Blanca, M. J., & Valero-Aguayo, L. (2022). Enhancing students' well-being with a unified approach based on contextual behavioural science: A randomised experimental school-based intervention. *Applied Psychology: Health and Well-Being*, 14(3), 1022–1036. <https://doi.org/10.1111/aphw.12365>