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Acceptance and Commitment Therapy in Group Format for College Students

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We randomly assigned 71 student participants to an acceptance and commitment therapy (ACT) group training or to a wait list. All participants completed measures at preintervention, 1-month postintervention, and 2-month follow-up. Students receiving ACT exhibited significantly reduced levels of general psychological distress and negative emotional symptoms at follow-up. Mental health outcomes for ACT were mediated by increases in psychological flexibility and mindfulness. Results suggest that ACT group training could be an effective mental health intervention in educational settings.

[AU2] *Keywords*: acceptance and commitment therapy, randomized controlled trial, group intervention, keyword 4, keyword 5

College counseling centers continue to experience rising demand for services (LeViness et al., 2018). Up to 35% of college students experience a diagnosable mental health disorder (Auerbach et al., 2018), and suicide and self-injury are concerns for college counselors (Lewis et al., 2019; Whisenhunt et al., 2015). Furthermore, college counseling services often have wait lists that are not easily downsized (Epstein, 2015).

Psychological distress in college may be reflective of a normative process whereby students distance from support networks (e.g., Brandy et al., 2015) and manage new intellectual, monetary, and social responsibilities (Saleh et al., 2017). Moreover, students report increasing academic and financial stressors (Jones et al., 2018). Unfortunately, untreated psychological distress during college may have long-lasting effects (Schwartz & Kay, 2014) and, despite the increase in students requesting support, it is estimated that other students are attempting to independently deal with
[AU3] problems (e.g., Hunt et al., 2005). Consequently, college counselors are challenged to support a rising number of service requests while reaching out to students who do not seek treatment.

One way to meet this challenge is by offering brief, transdiagnostic group and skills-based interventions. Such programs can meet varying psychological needs across a wide student body. They also offer the advantage of a short-term format and practical focus on self-development skills.

Acceptance and commitment therapy (ACT) is one of a generation of *contextual* cognitive behavior therapies that focus on a person's relationship with

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[AU4] their internal experience rather than the content of the experience (S. C. Hayes et al., 2004). ACT assumes that psychological distress arises from attempts to alter uncomfortable internal experiences (i.e., thoughts and emotions), resulting in maladaptive behavior (S. C. Hayes et al., 2011). This evasion of one's internal experience, called *experiential avoidance*, has emerged as a transdiagnostic risk factor suitable to be targeted in prevention programs (Kashdan et al., 2006). Indeed, ACT has proven its applicability in the prevention and treatment of a wide range of problems with medium-to-large effect sizes in samples studied (Powers et al., 2009).

As an alternative to avoiding private experiences, ACT cultivates *psychological flexibility*, which can be defined as being open to present-moment experiences (i.e., internal and external) and, depending on what the situation affords, with choosing a values-based behavior (S. C. Hayes et al., 2006). To produce psychological flexibility, which is its core mechanism of change, the ACT model targets six interrelated processes: (a) contacting the present moment with (b) acceptance (i.e., being aware and nonjudgmental of ongoing experience) and (c) defusion (i.e., seeing thoughts as products of the mind and not as literal facts), (d) experiencing self-as-context (i.e., cultivating a transcendent and flexible perspective), (e) identifying personal values, and (f) engaging in committed action (S. C. Hayes et al., 2011). These processes are viewed as psychological skills that can be developed through mindfulness, value clarification, and behavioral-activation strategies, and can be conveyed in a psychoeducational style. The first four processes (contacting the present moment, acceptance, defusion, and self-as-context) cluster into a higher order set of mindfulness and acceptance mechanisms, whereas the last two (personal values and committed action) concern engagement with personally meaningful behavior (S. C. Hayes et al., 2006).

Four studies have found ACT effective in improving the psychological health (i.e., stress, anxiety, depression, and psychological well-being) of college students at a medium-to-large magnitude (Levin et al., 2014; Muto et al., 2011; Räsänen et al., 2016; Stafford-Brown & Pakenham, 2012). These studies implemented a group-based training program (i.e., Stafford-Brown & Pakenham, 2012), bibliotherapy (i.e., Muto et al., 2011), or a web-based ACT program (i.e., Levin et al., 2014, and Räsänen et al., 2016). Two of the studies also addressed the mechanisms underpinning psychological improvements, revealing mediational effects by increases in psychological flexibility (Muto et al., 2011) and mindfulness (Stafford-Brown & Pakenham, 2012). All of these studies recruited selective subgroups of students (e.g., Levin et al., 2014; Muto et al., 2011; Stafford-Brown & Pakenham, 2012) or students willing to access web-based self-help (Räsänen et al., 2016). Furthermore, these studies had small sample sizes (i.e., $N = 76$, Levin et al., [AU5] 2014; $N = 70$, Muto et al., 2011; $N = 68$, Räsänen et al., 2016; and $N = 56$, Stafford-Brown & Pakenham, 2012), limiting the conclusions that can be drawn on ACT's effectiveness for college students and inviting further research in this field.

The Present Study

We examined whether a single-day (5-hour), campus-based ACT group training would (a) improve students' mental health and (b) facilitate ACT-consistent change processes (i.e., psychological flexibility and mindfulness) when offered to a heterogeneous group of students.

First, we hypothesized that an ACT training would lead to significant improvements in students' general psychological distress and negative emotional symptoms (i.e., stress, anxiety, and depression). Second, we predicted that any beneficial impact of the training would be mediated by changes in psychological flexibility and mindfulness. Given the conceptual overlap between psychological flexibility and mindfulness (Masuda & Tully, 2012), we did not predict whether any of these mediators would be more influential and run a [AU6] multiple mediator model on the two main outcomes to reveal total indirect effects of the intervention.

Method

Procedure

We advertised in two universities in the United Kingdom, drawing participants from 29 programs (e.g., MBA, law, finance, actuarial management, real estate management, psychology, mathematics, shipping studies) and applying no screening criteria. Participants were recruited via an advertisement flyer circulated through student email lists calling for students interested in a "psychological skills training." A total of 144 students expressed initial interest, with 71 volunteers completing the baseline measures that marked their entry into the study. The remaining 73 students withdrew their interest on account of (a) not consenting to questionnaire completion, (b) being unable to attend the training on the dates provided, or (c) misunderstanding the purpose of the training. The remaining 71 participants were randomized to an ACT-based training group (n = 35) or a wait-list control group (n = 36). [AU7] A blocked randomization procedure was performed using a randomization software program (https://www.randomization.com).

An a priori power analysis was calculated using G*Power 3 (Faul et al., 2009) to test between two independent group means over time, with a medium effect size (f = 0.25), power of .80, and an alpha of .05. Results indicated that a sample of 86 participants would suffice; however, recruitment fell short, resulting in a post hoc power of .72 before attrition.

Participants in both conditions completed the same measures on three occasions: preintervention, 1-month postintervention, and 2-month follow-up (administered 1 month after the postintervention). All measures were administered and completed electronically through an online survey platform (https://www.surveymonkey.com). For each measurement, participants received an email containing a personalized survey link. The wait-list control

group received the same training as the experimental group as soon as they had completed follow-up measures. The study received ethical approval from City University London's research ethics committee.

Participants

[AU8] We recruited 71 tertiary education students (69% female, $n = 35$; xx% male, $n = xx$) as participants. The majority (68%, $n = 45$) were studying for a postgraduate degree, whereas 26% ($n = 21$) were undergraduates, and 3% ($n = 2$) doctoral students. Over half (55%, $n = 39$) of participants were between ages 18 and 25, 24% ($n = 17$) were between 26 and 30, 11% ($n = 8$) were between 31 and 35, and 10% ($n = 7$) were 36 years or older. Most participants (85%, $n = 60$) were enrolled in a full-time course. Finally, 36% ($n = 25$) of participants were in paid employment alongside their academic studies.

Outcome Measures

General psychological distress. The General Health Questionnaire–12 (GHQ-12; Goldberg et al., 1997) measures general psychological distress. Respondents indicate whether they have experienced 12 symptoms (e.g., "Lost much sleep over worry?") over the last few weeks with four possible response options on [AU9] a 4-point, Likert-type scale ranging from *not at all* to *much more than usual*. Higher scores indicated greater levels of distress. The GHQ-12 is a widely used measure for the general population with high mean internal consistency across studies ($\alpha = .89$) and sensitivity in identifying psychological distress (69%; Hardy et al., 1999). In this study, the Cronbach's alpha coefficient was .90 at preintervention, .92 at postintervention, and .93 at follow-up.

Depression, anxiety, and stress. We used the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) to assess negative emotional symptoms. The DASS-21 has three subscales (i.e., Depression, Anxiety, and Stress), each having seven items. In our study, subscale responses were summed to create a composite measure of negative emotional symptoms. Indicative items consisted of "I found it hard to wind down" (Stress subscale), "I experienced trembling, e.g., in the hands" (Anxiety subscale), and "I felt down-hearted and blue" (Depression subscale). Respondents were asked to report their experience over the past 2 weeks using a 4-point, Likert-type scale of responses ranging from 1 (*did not apply to me at all*) to 4 (*applied to me very much or most of the time*). The DASS-21 has demonstrated sound psychometric properties among clinical and nonclinical populations with a mean Cronbach's alpha coefficient of .91 (Antony et al., 1998). In this study, Cronbach's alpha for the composite DASS-21 was .90 at preintervention, .92 at postintervention, and .92 at follow-up.

Process-of-Change Measures

Psychological flexibility. The Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011) is a measure of psychological flexibility assessing willing-

ness to experience internal states and pursue a valued life in the presence of unwanted experiences. We used the 10-item version of this scale, validated across student samples and with a mean Cronbach's alpha of .84 (Bond et al., 2011). It included items such as "I'm afraid of my feelings." The 7-point, Likert-type scale of response options ranged from 1 (*never true*) to 7 (*always true*). Higher scores indicated greater levels of psychological flexibility. Cronbach's alpha for the AAQ-II was .82 at preintervention, .82 at postintervention, and .90 at follow-up.

Mindfulness. We used the 14-item Freiburg Mindfulness Inventory (FMI; Walach et al., 2006) to assess participants' mindfulness skills. We chose the 14-item version because it has shown good construct validity and high internal consistency in meditation-naïve samples (α = .86; Walach et al., 2006). The scale assesses a stance of noticing mental events in a warm, accepting, and nonjudgmental way. Participants rated their mindful experiences over the past 2 weeks on a 4-point, Likert-type scale of responses ranging from 1 (*rarely*) to 4 (*almost always*). It includes items such as "I see my mistakes and difficulties without judging them." The Cronbach's alpha coefficient for the FMI was .82 at preintervention, .80 at postintervention, and .84 at follow-up.

ACT Intervention

The intervention was delivered in a single day (5 hours) by the first author, a counseling psychology doctoral student who was trained and supervised by the second author. The training was delivered to small groups on campus and based on an ACT protocol for the workplace (Bond, 2004). The program focused on developing two related skills: (a) *mindfulness*, which includes present-moment awareness, defusion, and acceptance; and (b) *values-based action*, which includes the clarification of personal values and values-based goal and action planning. The theme running through the training was that of learning how to untangle from internal barriers to pursue values-based action (e.g., effective behavior). To deliver the training, we used exercises developed by S.C. Hayes et al. (2011).

[AU10]

The training started with introductions and participant expectations. Opening, the trainer drew a human figure and showed examples of internal behaviour (i.e., emotions, thoughts) and observable, external world behaviour (i.e., actions). The trainer then introduced mindfulness, as a skill related to the internal world, and value clarification, as a skill related to the external world. To reveal the cost of experiential avoidance, participants were asked to consider "what effectiveness means," identifying examples of psychological barriers and efforts to remove them. Leading participants through the exercises of S. C. Hayes et al. (2011), the trainer questioned the effectiveness of internal control strategies eliciting a stance of "creative hopelessness" (p. xx). Then, participants were introduced to a suppression experiment (i.e., stop thinking of a "warm chocolate cake" p. xx) and the related "polygraph metaphor" (p. xx). A "clean" and "dirty" pain metaphor (p. xx) was used to summarise the

learning, and a mindfulness (of breath) exercise was offered as an alternative to internal control. Values were introduced through definition and examples, and participants completed a values assessment worksheet (S. C. Hayes et al., 2011). After debriefing, the trainer led a mindfulness practice (i.e, "mind watching," p. xx) and interrupted for a break.

Upon returning, the group engaged in an exercise to reveal the cost of getting entangled in thoughts ("Take your mind for a walk") as described in S. C. Hayes et al. (2011, p. xx). The trainer proceeded with a "chessboard" (p. xx) metaphor that is designed to cultivate an observer stance and reinforced this with a short mindfulness exercise ("the observer," p. xx). Following Bond (2004), students then worked on connecting their values to specific goals and behaviours. The training concluded with an overarching ACT metaphor, "passengers on the bus" (S. C. Hayes et al., 2011, p. xx), while all mindfulness and values exercises were provided for home practice.

Data Analysis Plan

Improvements in mental health. We used SPSS (Version 26) to analyze the data. Main effects were examined using between-group analyses of covariance (ANCOVAs) at postintervention and at follow-up for the two main outcomes (i.e., GHQ-12 and DASS-21). In each of these tests, we entered preintervention scores on the outcome variable as a covariate. Parametric assumptions were studied both visually and statistically, with acceptable findings. To estimate the magnitude of statistical effects, we used Cohen's *d*, whereby 0.2 reflects a small effect, 0.5 a moderate effect, and 0.8 a large effect size (Cohen, 1988).

Process of change. We applied A. F. Hayes's (2017) process macro (Version 3) for SPSS to test for mediation, using 5,000 bootstrap resamples with 95% bias-corrected and accelerated confidence intervals. We entered the two proposed mediators (i.e., mindfulness [FMI] and psychological flexibility [AAQ-II]) simultaneously in a multiple mediator model for each outcome (GHQ-12 and DASS-21) to test for total indirect effects.

Results

Participant Attrition

Figure 1 presents participant flow through the stages of the study, including reasons given for dropout. The completer sample (i.e., control and wait-list participants who completed all measures, including the 2-month follow-up) [AU11] comprised 19 participants in the ACT condition and 26 wait-list controls. A chi-square test for independence (with Yates's continuity correction) indicated no significant association between group and dropout, $\chi^2(1, n = 71) = 1.74$, $p > .05$, $\Phi = .18$. There were no significant baseline differences on main variables between dropouts and completers. Randomization was successful in that there were no significant baseline differences between conditions.

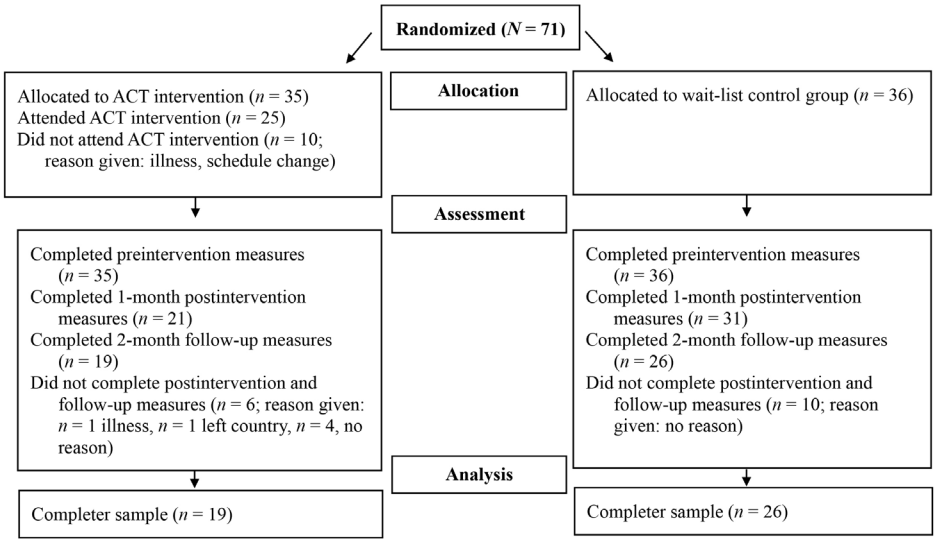

FIGURE 1

Flowchart Showing Participant Attrition and Reasons Given for Dropout

Improvements in Mental Health

Table 1 shows that the beneficial impact of ACT emerged at the 2-month follow-up, by which time participants exhibited significantly lower levels of general psychological distress (GHQ-12; ACT $M = 8.95$ vs. control $M = 13.91$), negative emotional symptoms (i.e., composite DASS-21; ACT $M = 21.05$ vs. control $M = 37.85$), and significantly higher levels of psychological flexibility (AAQ-II; ACT $M = 47.12$ vs. control $M = 42.33$) and mindfulness (FMI; ACT $M = 37.53$ vs. control $M = 33.54$). The difference at follow-up between ACT and the control group was large for negative emotional symptoms ($d = 0.91$) and medium ($d = 0.75$) for general psychological distress, psychological flexibility ($d = 0.46$), and mindfulness ($d = 0.62$).

[AU12]

Process of Change

[AU13] Mediation analyses focused on the change between preintervention and follow-up. The mediation results are shown in Table 2. There were statistically significant total indirect effects of the ACT intervention on the two mental health outcomes (GHQ-12 and DASS-21), indicating that the effects of ACT were transmitted via combined increases in mindfulness and psychological flexibility.

Discussion

This trial examined the effectiveness of a brief, ACT group intervention for improving college students' mental health in pragmatic conditions. Students

TABLE 1

Means, Standard Deviations, and Between-Groups Effects (BGE) at Postintervention and Follow-Up

	Condition				Postvention BGE[a]		Follow-Up BGE		
	ACT		Control						
Variable	*M*	*SD*	*M*	*SD*	*F*(1, 50)	*d*	*F*(1, 43)	*p*	*d*
GHQ-12					3.11	.50	5.95	.02	.75
Pretest	15.67	6.79	16.06	7.56					
Posttest	10.22	6.01	13.48	6.94					
Follow-up	8.95	6.08	13.91	7.09					
Composite DASS-21					1.46	.36	10.21	.00	.91
Pretest	32.88	18.74	36.98	22.60					
Posttest	23.84	24.01	31.14	14.81					
Follow-up	21.05	13.87	37.85	21.93					
AAQ-II					2.21	.37	4.05	.05	.46
Pretest	42.43	8.26	41.47	11.45					
Posttest	45.83	9.77	42.35	8.96					
Follow-up	47.12	9.53	42.33	11.12					
FMI					2.51	.53	4.29	.04	.62
Pretest	36.31	6.11	34.32	7.47					
Posttest	37.74	5.38	34.65	6.10					
Follow-up	37.53	6.16	33.54	6.53					

Note. ACT = acceptance and commitment therapy; GHQ-12 = General Health Questionnaire–12; DASS-21 = Depression Anxiety Stress Scales; AAQ-II = Acceptance and Action Questionnaire; FMI = Freiburg Mindfulness Inventory.

[a]After controlling for preintervention scores.

randomly assigned to an ACT training experienced improvements in general mental health and negative emotional symptoms at 2-month follow-up, although not at 1-month postintervention. Mediation tests suggested that beneficial effects of the intervention at follow-up were transmitted via processes of change that were consistent with ACT.

An encouraging feature of the results is the improvement in mental health found among ACT participants between postintervention and follow-up on both outcome measures (GHQ-12 and DASS-21). That is, although outcomes did not indicate a statistically significant between-groups difference at postintervention, the ACT group continued to improve over time. In contrast, the control group exhibited an erratic pattern of psychological health across measurements. The statistically significant (and medium-to-large) between-groups effects observed at follow-up resulted from a combination of continued improvement in the ACT group and fluctuations observed among the controls.

The timing of the assessments is one explanation for the pattern of outcomes. The 1-month postintervention measures were administered at the beginning of January, so students would have been reporting retrospectively for a period that included the school's Christmas holiday break. This may explain why stress and anxiety levels were also lower in the control group at postintervention compared with baseline. Follow-up measures were administered 1 month later (early February), by which time the students would have started a new

TABLE 2

Bootstrapped Multiple Mediation Analyses

Outcome and Process Variables	Bootstrap Results		
	PE	*SE*	BCa 95% CI
GHQ-12			
Psychological flexibility	–1.82	1.23	(–4.74, –0.09*)
Mindfulness	–1.15	0.91	(–3.31, 0.25)
Total indirect effect	–2.98	1.48	(–6.30, –0.51*)
Composite DASS-21			
Psychological flexibility	–3.21	2.87	(–10.57, 0.16)
Mindfulness	–1.34	2.23	(–7.15, 1.77)
Total indirect effect	–4.54	3.08	(–12.49, –0.55*)

Note. PE = point estimate; BCa = bias corrected and accelerated; CI = confidence interval; GHQ-12 = General Health Questionnaire–12; DASS-21 = Depression Anxiety Stress Scales; AAQ-II = Acceptance and Action Questionnaire; FMI = Freiburg Mindfulness Inventory.
*Indicates statistically significant total or specific indirect effect.

academic term and would have been reporting retrospectively on an exam period. Thus, one interpretation may be that the ACT intervention enhanced students' between-term experiences and then (at follow-up) offered protection from the pressures of college life. Comparably, McConville at al. (2017) noted that mindfulness postintervention data collected near exam periods had a remediating effect on students' stress.

Another explanation, for this delay effect, would be that mindfulness and acceptance require practice to develop. Soler et al. (2014) found that processes such as *observing* and *nonreactivity* were especially sensitive to practice effects. Specifically, Hooper and Larsson (2015) described a sporadic delay effect observed in some ACT studies, positing that some populations may struggle to abandon avoidance and thought entanglement.

To our knowledge, this is the first study demonstrating ACT's efficacy as a brief group intervention for the wider student body. The statistically medium-to-large improvements we found are comparable to those found in ACT programs, often of longer duration, delivered to targeted subgroups of students (Levin et al., 2014; Muto et al., 2011; Stafford-Brown & Pakenham, 2012). It appears that a brief program may be suitable for integration in campus initiatives, causing minimal disruption to participants' schedules.

The mediation analyses indicated that the intervention successfully targeted the hypothesized, ACT-consistent mechanisms of change, psychological flexibility, and mindfulness. The multiple mediation tests revealed significant total indirect effects of ACT on the two mental health outcomes between preintervention and follow-up, suggesting that the program's impacts were transmitted through combined increases in psychological flexibility and mindfulness. Similar mediation findings, after offering an ACT intervention to students, were reported by Muto et al. (2011), who also found improvements on the GHQ-12 to be mediated by changes in psychological flexibility (AAQ-II), and

by Stafford-Brown and Pakenham (2012), who found combined mediation effects via increases in psychological flexibility and mindfulness.

Limitations

One limitation in our study was its simple comparison of an ACT group with a wait-list control group. Comparing ACT to another active group intervention (e.g., stress inoculation group) would have been useful in examining the specificity of hypothesized process variables (i.e., mindfulness).

Following participant attrition, the final completer sample was modest (ACT $n = 19$, control $n = 26$). A risk of this level of dropout is that it could affect the integrity of the randomization and result in loss of power for detecting effects, allowing for a less realistic estimate of intervention impact (Rickles et al., 2017). Despite students often providing reasons for disengaging, factors such as nonacceptance of the intervention, no contact with the trainer postintervention, or low motivation to implement skills may have influenced dropout. In other mindfulness studies in colleges that also reported high attrition, attrition was more likely near exam periods (e.g., Renner & Foley, 2013). Interestingly, in an ACT study for students with very low attrition (9.1%), Räsänen et al. (2016) suggested that weekly online support at postintervention, and the recruitment of students highly motivated to change, helped in retaining participants. Nonetheless, our study's completer sample is similar to that of other ACT studies in nonclinical, preventive settings that have detected analogous effects, instilling confidence in the findings (Flaxman & Bond, 2010).

Another drawback was the simultaneous measurement of mediator and outcome variables, since *causal* mediation is only established if change on mediating variables occurs prior to change on outcomes (Kazdin, 2007). Nevertheless, even when mediating and outcome variables are concurrently measured, mediation tests are assumed to go beyond correlation (Gaudiano et al., 2010). Clarifying the mechanism/s of change is important as it reinforces the argument of the intervention's transdiagnostic utility, which is of interest when designing "offered to all" programs for students. For instance, experiential avoidance (a component of psychological inflexibility) has been consistently found to act as a transdiagnostic risk factor in the development of emotional disorders (Spinhoven et al., 2014).

Implications for College Counseling

Delivering interventions on campus in the form of training or outreach activities fits well with the ethos of college counseling centers (Brunner et al., 2017). Brief, evidence-based training interventions may reduce referrals by providing students with a skill set that, for some, may be sufficient. Of equal value is the potential of supporting students who might not have presented for therapy but may be accepting of an open training format.

It is recommended that college counselors incorporate into traditional college activities brief, ACT-based trainings (e.g., open-to-all skills seminars, embedded in a psychology module curriculum), as doing so would help to keep the costs down. This would entail organizing day-long (5- or 6-hour) ACT groups or, alternatively, introducing brief (2- or 4-hour) seminars embedded in activities such as inductions to a society, club, or team. Brief seminars can be expanded by providing support material online or electronically, such as through text, video, website, or podcast (Miselli et al., 2013). In our study recruitment was materialized through email invitations; however, this did not seem to succeed as a strategy, possibly because students ignore information received from electronic mailing lists, perceiving it as spam. Students can otherwise be informed of ACT group interventions during induction week, through student societies, and via student support and counseling services. On the basis of informal feedback from our participants, we recommend offering brief booster sessions either at 1-month postintervention or once every term to ensure maintenance of skills. This type of brief intervention sits well with the preventive and educational roles taken on by college counseling centers (e.g., Locke et al., 2016). In addition, ACT's emphasis on personal values seems to be suitable for this age group, being that its members are in a process of self-exploration.

Specific academic training in ACT is not a prerequisite to practice. However, it is advisable that one has acquired (or is in training) for a counseling qualification and has participated in ACT-specific training events (for more information, see contextualscience.org).

Suggestions for Future Research

Further research in this area—specifically, research examining different formats for delivery—is warranted. Researchers may study the impact of combining briefer training programs (i.e., 3-hour taster sessions) that will then be supported by online materials (podcasts, online personal development exercises, access to mindfulness material) and brief booster sessions on each academic term. Additionally, focus could fall on identifying moderating effects of motivators for engaging in an ACT college program (e.g., willingness to change, identified emotional difficulties, eagerness to acquire self-development skills).

Conclusion

Our study delivers promising findings on the application of ACT as a brief, general preventive group intervention for college students. The model's transdiagnostic approach offers advantages, given the diversity of problems in college campuses. Indeed, ACT has been found to be an effective approach for a wide variety of problems extant on college campuses, such as substance

misuse, anxiety, and mood disorders (Ruiz, 2010). The intervention's practical, skills-based approach can prove valuable in designing brief seminars that target specific therapeutic processes (e.g., mindfulness) and are also interesting and fun for student populations.

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02Author Query List JOCC1021 Christodoulou

Author: Your article has been edited for grammar, consistency, and to conform to ACA and APA journal style. To expedite publication, we generally do not query every routine grammatical or style change made to the manuscript, although substantive changes have been noted. Note, the issue is not finalized, so page numbers of your article may change. Pay careful attention to your tables (if any) and proof carefully as information has been re-keyed and edited for APA tabular style. Please review article carefully and provide answers to the following specific queries:

[AU1: Please verify all author information, including mailing address of corresponding author. Author bio should reflect affiliation at the time this article was written as well as current information for all authors.]

[AU2: Please provide two additional keywords for a total of five.]

[AU3: Should Hunt et al. 2005 be Hunt & Eisenberg 2005 as shown on the reference list?]

[AU4: Please indicate which reference is meant by S.C. Hayes et al. 2004, as there are 2 of those on the reference list, but only 1 is cited in the article.]

[AU5: (a) Should "mediational effects by" be "mediational effects as indicated by"? (b) For the underlined beginning "Furthermore," because the sample sizes are similar, OK to edit for conciseness to "Furthermore, these studies had small sample sizes (56 to 76 participants), limiting the conclusions…"?]

[AU6: Is it correct for your meaning to insert "not" where underlined ("and we did not run") for clarity? Something seems missing for syntax.]

[AU7: (a) Please provide at least a general time for when you conducted the study. For example, where underlined "In *month/semester* of *20XX*, we advertised…) (b) It seems the URL for the randomization software leads to a website that is not secure and is no longer being updated. I received a security warning when I tried to access it. Would you prefer to omit the URL and state simply "We used block randomization to assign participants to groups"? (Note "block" rather than "blocked.")]

[AU8: (a) Where underlined, the calculation of percentages does not correspond to the *n*s provided. Please reconcile. (b) Regarding gender, please provide the *n*s and percentages of male students or other gender groups as appropriate for your study ("female" is provided, so presumably there was an option for "male"). (c) The total number of students by education status (45+21+2) equals 68, whereas the sample size is 71. Please reconcile.]

[AU9: Is the underlined insertion (4-point scale) correct for the GHQ-12 version that you used?]

[AU10: (a) The article states that the protocol used was based on Bond 2004, but in the next two paragraphs, S.C. Hayes et al. 2011 is cited after the exercises (without further explanation). It seems a transition is needed for clarity. Is the underlined transition "To deliver the training, we used exercises…" acceptable/correct for your study? (b) In the middle of the next paragraph, is the transition "Leading participants through the exercises of" correct for your study? (c) Where underlined, please provide the page number for each citation (8 instances total) where in your judgment Hayes et al. best explains the term used (per APA rules for direct quotations). (d) Is the "values assessment worksheet" also published in Hayes et al. or was it your own worksheet based on Hayes? Perhaps you would like to clarify for readers.]

[AU11: Is the underlined insertion to explain what is meant by "completer sample" correct for your meaning?]

[AU12: (a) Under Improvements in Mental Health, are the underlined insertions correct for your study to highlight main findings in Table 1 per APA style? (b) Table 1 was edited for APA/house style. Please review the table and note and indicate if any further changes are needed.]

[AU13: (a) By "on the change between" do you mean "on the change in participants' mean scores between" or does that distort the meaning? (b) In Table 2, the note refers to "statistically significant." Should that be defined in terms of a specific *p* value (such as < .05)?]

[AU14: Per previous query, only one S.C. Hayes et al. 2004 is cited in the article. Please indicate where the other should be cited or if OK to delete.]

[AU15: Please indicate where Jacobson & Truax should be cited in the article or if OK to delete.]

[AU16: Please indicate where Royal College 2011 should be cited in the article or if OK to delete.]

[AU17: Please indicate where Reetz et al. 2013 should be cited in the article or if OK to delete.]

[AU18: Please indicate where Sharkin et al. 2005 should be cited in the article or if OK to delete.]