

**Acceptance and Commitment Therapy in Group Format for College Students**

**Abstract**

Seventy-one students were randomly assigned to an Acceptance and Commitment Therapy (ACT) group training or to a waitlist, completing measures at preintervention, one-month postintervention and two-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. The study suggests that ACT group training could be an effective mental health intervention in educational settings.

*Keywords:* Acceptance and commitment therapy (ACT), randomized controlled trial, group intervention

### **Acceptance and Commitment Therapy in Group Format for College Students**

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

Psychological distress in college maybe reflective of a normative process involving distancing from support networks (e.g., Brandy et al., 2015) and managing 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 increases in students requesting support, it is estimated that other students are attempting to independently deal with problems (e.g., Hunt et al., 2005). Consequently, college counselors are met with the challenges of supporting rising numbers of service requests while reaching-out to students who do not seek treatment.

To meet these challenges, college counselors can introduce brief, transdiagnostic, group and skills-based interventions. Such programs can be rolled-out among the wider student body and meet varying psychological needs. The attraction of this type of program would be its short-term format and practical focus on self-development skills.

Acceptance and Commitment Therapy (ACT) is of a generation of *contextual* Cognitive Behavioral Therapies, focusing on a person's relationship to their internal experience rather than the content of this experience (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 (Hayes et al., 2011). This evasion

of one's internal experience, coined *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 (Powers et al., 2009).

As an alternative to avoiding private experiences, ACT cultivates psychological flexibility, defined as being open to present moment experiences (i.e., internal and external) and depending on what the situation affords, choosing a value-based behavior (Hayes et al., 2006). ACT's model targets six interrelated processes that combine to produce psychological flexibility, the model's core mechanism of change: (1) *contacting the present moment* with (2) *acceptance* (i.e., being aware and non-judgmental of ongoing experience), (3) *defusion* (i.e., seeing thoughts as products of the mind and not as literal facts), (4) experiencing *self-as-context* (i.e., cultivating a transcendent and flexible perspective), (5) identifying *personal values* and (6) engaging in *committed action* (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 cluster into a higher order set of mindfulness and acceptance mechanisms while the remaining two, concern engagement with personally meaningful behavior (Hayes et al., 2006).

Four studies have found ACT effective in improving the psychological health (i.e., stress, anxiety, depression, and psychological wellbeing) 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; Räsänen et al., 2016). Two of these 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 sub-groups 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., 2014;  $N=70$ , Muto et al., 2011;  $N=68$ , Räsänen et al., 2016;  $N=56$ , 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 hours) 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 heterogenous group of students.

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). Secondly, 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 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 courses (i.e., 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 by email to 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 due to (a) not consenting to questionnaire completion, (b) being unable to attend the training on the dates provided and (c) misunderstanding the purpose of the training. The remaining 71 participants were randomized to ACT-based training ( $n = 35$ ) or to a waitlist control group ( $n = 36$ ). A blocked randomization procedure was performed with a randomization software program (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 ( $f = .25$ ), 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; one-month postintervention; and two-month follow-up (administered one month after the postintervention). All measures were administered and completed electronically through an online survey platform (surveymonkey.com). On each measurement, participants received an email containing a personalized survey link. The waitlist control group received the same training as soon as the follow-up measures had been completed. The study received ethical approval from City University London’s research ethics committee.

## **Participants**

Seventy-one tertiary education students (69% female,  $n=35$ ) were recruited. The majority (68%,  $n=45$ ) were studying for a postgraduate degree, while 26% ( $n=21$ ) were undergraduates and 3% ( $n=2$ ) doctoral students. Over half (55%,  $n=39$ ) of participants were aged between 18 and 25; 24% ( $n=17$ ) were aged between 26 and 30; 11% ( $n=8$ ) between 31-35; 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 Health Questionnaire-12 (GHQ-12)***

The GHQ-12 (Goldberg et al., 1997) measures general psychological distress. Respondents indicate whether they have experienced twelve symptoms (e.g., “Lost much sleep over worry?”) over the last few weeks with four possible response options (i.e., *Not at all* to *Much more than usual*). Higher scores indicated greater levels of distress. 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 alpha coefficient was .90 at preintervention, .92 at postintervention, and .93 at follow-up.

### ***Depression Anxiety Stress Scales (DASS-21)***

The DASS-21 (Lovibond, & Lovibond, 1995) was employed to assess negative emotional symptoms using three, 7-item subscales (i.e., depression, anxiety, and stress). Responses were summed up to create a composite measure of negative emotional symptoms. Indicative items consisted of “I found it hard to wind down” (stress scale), “I experienced trembling, e.g., in the hands” (anxiety scale) and “I felt down-hearted and blue” (depression

scale). Respondents were asked to report their experience over the past two weeks using a 4-point response scale ranging from it ‘*Did not apply to me at all*’ to ‘*Applied to me very much, or most of the time*’. DASS-21 has demonstrated sound psychometric properties among clinical and non-clinical populations with a mean Cronbach alpha coefficient of .91 (Antony et al., 1998). In this study, Cronbach alpha for the composite DASS-21 was .90 at preintervention, .92 at postintervention, and .92 at follow-up.

### **Process of Change Measures**

#### ***Acceptance and Action Questionnaire (AAQ-II)***

The AAQ-II (Bond et al., 2011) is a measure of psychological flexibility assessing willingness 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 alpha of .84 (Bond et al., 2011). It included items such as “I’m afraid of my feelings”. The response options ranged from *Never true, (1)* through to *Always true (7)*. Higher scores indicated greater levels of psychological flexibility. Cronbach alpha for the AAQ-II was .82 at preintervention, .82 at postintervention, and .90 at follow-up.

#### ***Freiburg Mindfulness Inventory (FMI)***

The 14-item FMI was employed to assess mindfulness skills (Walach et al., 2006). We chose the 14-item version of the FMI because it has shown good construct validity and high internal consistency in meditation-naïve samples ( $\alpha = .86$ ) (Walach et al., 2006). The scale assesses a stance of noticing mental events in a warm, accepting, and non-judgmental way. Participants rated their mindful experiences over the past two weeks on a 4-point response scale ranging from *Rarely (1)* to *Almost always (4)*. It included items like “I see my mistakes and difficulties without judging them”. The Cronbach 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, 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: (1) *mindfulness*, which included present moment awareness, defusion and acceptance, and (2) *values-based action*, which included the clarification of personal values and values-based goal and action planning. The theme running through the training was learning how to untangle from internal barriers to pursue values-based action (e.g., effective behavior).

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. The trainer questioned the effectiveness of internal control strategies eliciting a stance of creative hopelessness (Hayes et al., 2011). More, a suppression experiment (*STOP thinking of a warm chocolate cake*; Hayes et al., 2011) and a related metaphor were introduced (*polygraph metaphor*; Hayes et al., 2011). A *Clean and dirty pain metaphor* (Hayes et al., 2011) summarised the learning, and mindfulness was presented as an alternative to internal control (i.e., Mindfulness of breath; Hayes et al., 2011). Values were introduced through definition and examples (Hayes et al., 2011), and participants completed a *Values assessment worksheet* (Hayes et al., 2011). After debriefing, the trainer led a mindfulness practice (Mind watching; Hayes et al., 2011) 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*; Hayes et al., 2011). The trainer proceeded with a metaphor designed to cultivate an observer stance (*Chessboard metaphor*; Hayes et al., 2011) and reinforced this with a short mindfulness exercise (*The observer*; Hayes et al., 2011). Students then worked on connecting their values to specific goals and behaviours (*Values, goals, actions, and barriers form*; Bond, 2004). The training concluded with an overarching ACT metaphor (*Passengers on the bus*; Hayes et al., 2011) while all mindfulness and values exercises were provided for home-practice.

### **Data Analysis Plan**

#### ***Improvements in Mental Health***

The data was analyzed with SPSS Statistics (Version 26). Main effects were examined using between-group analyses of covariance (ANCOVAs) at postintervention and follow-up for the two main outcomes (GHQ-12; DASS-21). In each of these tests, preintervention scores on the outcome variable was entered as a covariate. Parametric assumptions were studied both visually and statistically, with acceptable findings. To estimate the magnitude of statistical effects, Cohen's  $d$  was reported, where 0.2 reflects a small effect, 0.5 a moderate effect and 0.8 a large effect size (Cohen, 1988).

#### ***Process of Change***

We used Hayes' (2017) Process SPSS macro (version 3) to test for mediation using 5000 bootstrap resamples, with 95% bias-corrected and accelerated (BCa) 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; DASS-21) to test for total indirect effects.

## Results

### Participant Attrition

Figure 1 presents participant flow including reasons for dropout. The completer sample comprised of 19 participants in the ACT condition and 26 waitlist controls. A chi-square test for independence (with Yates 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.

INSERT FIGURE 1 HERE

### Improvements in Mental Health

Table 1 shows that the beneficial impact of ACT emerged at the two-month follow-up, by which point participants exhibited significantly lower levels of general psychological distress (GHQ-12), negative emotional symptoms (i.e., Composite DASS-21), and significantly higher levels of psychological flexibility (AAQ-II) and mindfulness (FMI). The follow-up difference between ACT and the control group was large for negative emotional symptoms ( $d = .91$ ) and medium ( $d = .75$ ) for general psychological distress, psychological flexibility ( $d = .46$ ) and mindfulness ( $d = .62$ ).

INSERT TABLE 1 HERE

### Process of Change

Mediation analyses focused on 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; DASS-21),

indicating that the effects of ACT were being transmitted via combined increases in mindfulness and psychological flexibility.

INSERT TABLE 2 HERE

### **Discussion**

This trial examined the effectiveness of a brief, ACT group intervention for improving college student's mental health in pragmatic conditions. Students randomized to an ACT training, experienced improvements in general mental health and negative emotional symptoms at two-month follow-up, though not at one-month postintervention. Mediation tests suggested that beneficial effects of the intervention at follow-up were being transmitted via ACT-consistent processes of change.

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, DASS-21). That is, although outcomes did not indicate a statistically significant between-group 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-group 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 one-month postintervention measures were administered at the beginning of January, so students would have been reporting retrospectively for a period that included the Christmas break. This may explain why stress and anxiety levels were also lower in the control group at postintervention compared to baseline. Follow-up measures were administered one month

later (early February), by which time the students would have started a new 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 et 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 *non-reactivity* were especially sensitive to practice effects. Specifically, Hooper, and Larsson (2015) described a sporadic delay effect observed in some ACT studies, posing that some populations may struggle with abandoning 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 are comparable to those found in, often longer duration, ACT programs delivered to targeted subgroups of students (Stafford-Brown & Pakenham 2012; Muto et al., 2011; Levin et al., 2014). It appears that a brief program may be suitable for integration in campus initiatives and 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 being 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 Stafford-Brown and Pakenham (2012) who found combined mediation effects via increases in psychological flexibility and mindfulness.

### **Limitations**

One limitation was the simple comparison of ACT to a waitlist 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 = 19, Control = 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 affected dropout. Other mindfulness studies in colleges that also reported high attrition, noted that 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, this 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 skillset that, for some, may be sufficient. Of equal value is the potential of supporting students who might not have presented for therapy but maybe more accepting of an open training format.

It is recommended that college counselors incorporate short ACT-based trainings in traditional college activities as this will also keep the costs down (e.g., open-to-all skills seminars, embedded in a psychology module curriculum). This would entail either organizing day-long (5-6 hour) ACT groups or alternatively, introducing brief (2 or 4 hour) seminars that will be embedded in activities like inductions to a society, clubs, or teams. These brief seminars can be expanded by providing support material on an online website such as text, video, and podcast (Miselli et al., 2013). In this study, recruitment was materialized through email invitations, although it did not seem to succeed as a strategy. This may be due to students not paying attention to information received from electronic mailing lists which may be perceived as spam. Students can otherwise be informed of ACT group interventions during induction week, through student societies, and student support and counseling services. Based

on informal feedback provided by our participants, we would recommend offering brief booster sessions either at one-month postintervention or once every term to ensure skills' maintenance. This type of brief intervention sits well with the preventative 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 in a process of self-exploration.

Specific academic training in ACT is not a pre-requisite 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 the reader can visit [contextualscience.org](http://contextualscience.org)).

### **Suggestions for Future Research**

Further research in this area is warranted, specifically looking at different formats for delivery. Researchers may study the impact of combining briefer training programs (i.e., three-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 (i.e., willingness to change, identified emotional difficulties, eagerness to acquire self-development skills).

### **Conclusion**

This study delivers promising findings on the application of ACT as a brief general preventative 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 in 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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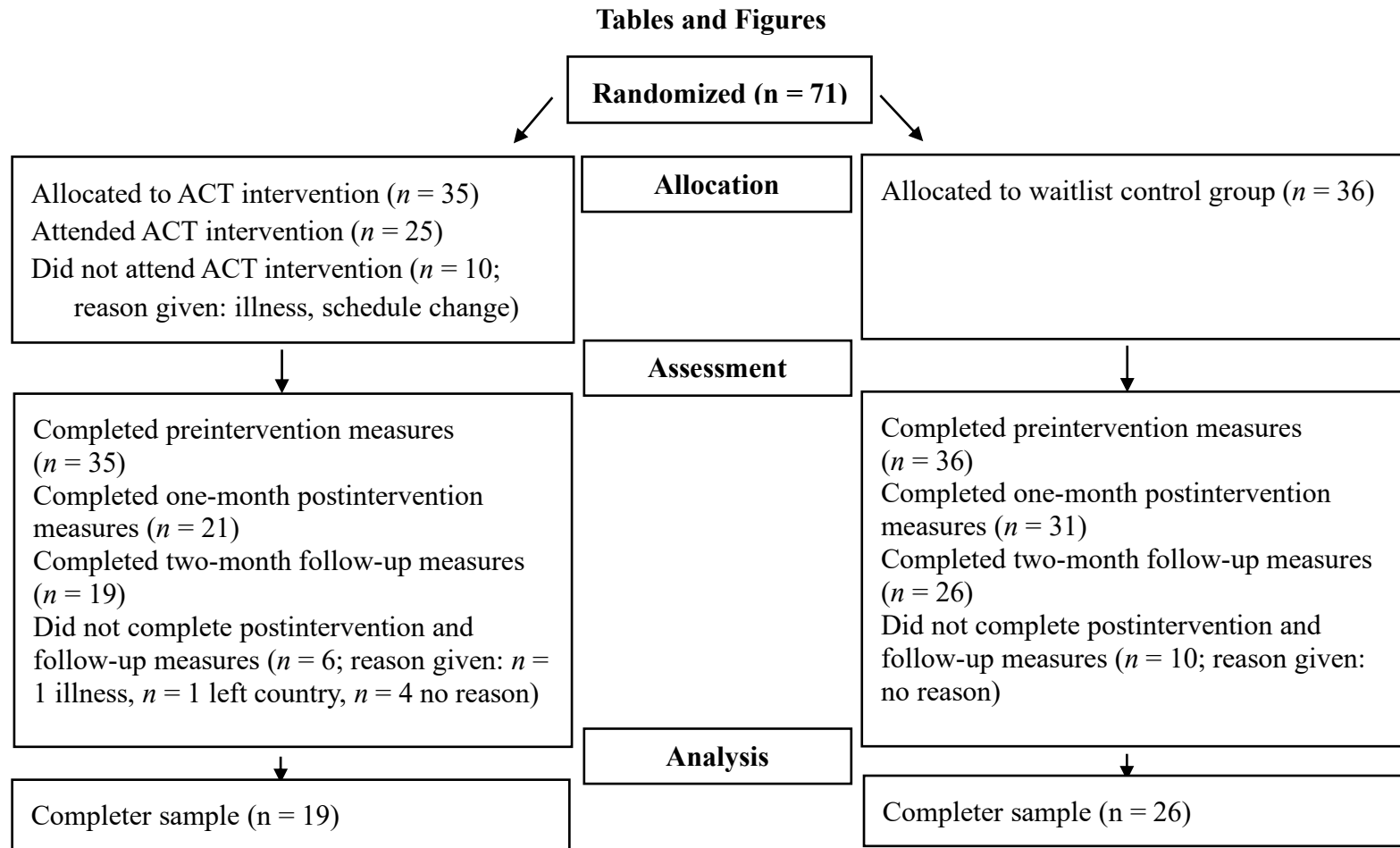


Figure 1. Participant Flowchart



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	Post	23.84	24.01	31.14	14.81	1.46, $p = ns$	.36	
	F-U	21.05	13.87	37.85	21.93			10.21, $p = .00^*$ .91
AAQ-II	Pre	42.43	8.26	41.47	11.45			
	Post	45.83	9.77	42.35	8.96	2.21, $p = ns$	.37	
	F-U	47.12	9.53	42.33	11.12			4.05, $p = .05^*$ .46
FMI	Pre	36.31	6.11	34.32	7.47			
	Post	37.74	5.38	34.65	6.10	2.51, $p = ns$	.53	
	F-U	37.53	6.16	33.54	6.53			4.29, $p = .04^*$ .62

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*Note.*<sup>a</sup> After controlling for preintervention scores. \*Indicating statistical significance.

Table 2

*Bootstrapped Multiple Mediation Analyses*

Outcome Variables <sup>a</sup>	Process Variable	Bootstrap Results	BCa 95% CI <sup>b</sup>	
		Point Estimate (SE)	Lower	Upper
GHQ-12				
	Psychological flexibility	-1.82 (1.23)	-4.74	-0.09*
	Mindfulness	-1.15 (0.91)	-3.31	.025
	Total indirect effect	-2.98 (1.48)	-6.30	-0.51*
Composite DASS-21				
	Psychological flexibility	-3.21 (2.87)	-10.57	.16
	Mindfulness	-1.34 (2.23)	-7.15	1.77
	Total indirect effect	-4.54 (3.08)	-12.49	-.55*

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*Note.* <sup>a</sup>Change assessed between preintervention and two-month follow-up. <sup>b</sup>BCa CI = bias corrected and accelerated confidence interval. \*Indicates statistically significant total or specific indirect effect.

