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The Value of Workshops on Psychological Flexibility for Early Childhood Special Education Staff

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Abstract

High stress and burnout are common for early childhood special educators, contributing to high rates of attrition, diminished educational effectiveness, and high turnover. Acceptance and Commitment Therapy (ACT) is a promising approach for the prevention and treatment of a wide variety of problems. Using a randomized wait-list control design, this pilot study evaluated whether ACT workshops delivered to preschool teachers who serve children with developmental disabilities would improve stress-related problems of teachers (i.e., stress, depression, and burnout) and increase collegial support. At pretest, measures of *experiential avoidance* (EA) and *mindful awareness* (MA) showed significant relationships to reports of depression, stress, and burnout. The intervention reduced staff members' EA, increased teachers' MA and *valued living* (VL), and improved teachers' sense of efficacy. This suggests that ACT workshops can help influence factors affecting depression, stress, and burnout in an early childhood special education setting.

Keywords

classroom environment; depression; evidence-based practices; intervention strategies; personnel; teaming

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This article describes a preliminary experimental evaluation of workshops designed to increase psychological flexibility among early childhood special education (SE) staff. Psychological flexibility involves the ability to be fully in contact with the events of the present moment and behave in ways that further one's chosen values (Biglan, Hayes, & Pistorello, 2008). Interventions that increase psychological flexibility have been shown to affect a surprising range of problems, including anxiety, depression, schizophrenia, epilepsy, cigarette smoking, stress, job burnout, and diabetes (Biglan et al., 2008; Gifford et al., 2004; Gregg, Callaghan, Hayes, & Glenn-Lawson, 2007; Hayes, Bissett, et al., 1999; Hayes, Masuda, & De Mey, 2003; Hayes & Pankey, 2002; Hayes, Strosahl, & Wilson, 2002; Masuda et al., 2007). Studies of such interventions in organizational settings have been shown to increase innovativeness (Bond & Bunce, 2000) and openness to the use of evidence-based practices (Varra, Hayes, Roget, & Fisher, 2008). Considering that stress and depression are common among teachers (Bauer et al., 2006; Evans, 2003; Kyriacou, 2001)

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and that resistance to new practices is common in school settings (Carnine, 1997, 2000), interventions of this type could be valuable.

Stress Among Early Childhood Special Educators

It is well documented that stress is a problem for educators, including early childhood educators (Hinds et al., in press). Frequent and prolonged stress contributes to burnout and undermines teachers' commitment to remain in the profession (Wisniewski & Gargiulo, 1997). Stress also affects the psychological, social, and physiological health of teachers (Hurrell, Nelson, & Simmons, 1998).

Evidence on stress among early childhood special educators is more limited, but evidence suggests that SE teachers generally have higher rates of stress than teachers who are not in SE (Boe, Bobbitt, & Cook, 1997; Kokkinos & Davazoglou, 2009). SE teachers are more likely than general educators to leave their jobs due to stress (Boe, Bobbitt, Cook, & Weber, 1995; Boe et al., 1997). Stress may be higher among special educators because their students present more challenges. Student misbehavior is a major stressor (Abel & Sewell, 1999; Borg, Riding, & Falzon, 1991; Chan & Hui, 1998; Dorman, 2003; Kelly & Berthelsen, 1995; Makinen & Kinnunen, 1986; Manassero et al., 2006; Newmann, Rutter, & Smith, 1989), and teacher depression and burnout are more likely in schools with high levels of student disruptive behavior (Beer & Beer, 1992; Dorman, 2003; Hastings & Bham, 2003; Schonfeld, 1992a, 1992b). SE teachers of students with emotional and behavioral difficulties report higher rates of occupational stress, job-related distress, and attrition (Kokkinos & Davazoglou, 2009). Lawrenson and McKinnon (1982) found that SE teachers working with children with behavioral and emotional disabilities are at highest risk for leaving the classroom, with attrition rates approximately 6 times that of other special educators. Teachers report that, among children with behavioral and emotional difficulties, those with autism present the most stress, followed by those with behavioral difficulties, Attention Deficit Hyperactivity Disorder, emotional difficulties, mental retardation, visual impairment, and physical disability (Wisniewski & Gargiulo, 1997). SE teachers reporting frequent and intense stress indicate that they feel (a) less sensitive to the social, physical, and emotional needs of their students; (b) less likely to deliver positive reinforcement; (c) less able to concentrate on instructional interactions; (d) less effective in managing classroom discipline; and (e) more likely to use aversive methods to modify student behavior (Wisniewski & Gargiulo, 1997).

Although research on stress among early childhood special educators is limited, there is ample evidence that stress is a problem among preschool child care providers. Curbow, Spratt, Ungaretti, McDonnell, and Breckler (2000) reported that for center-based caregivers, salient stressors were late payments, attendance of sick children, parents who blame the child care for their children's behavioral difficulties, parents coming late to pick up children, and events in the children's lives the providers cannot change. Younger providers and those with lower social support also report greater job stress (Kontos & Riessen, 1993). As child care providers are among the lower paid workers in the United States (Center for the Child Care Workforce, 2006), they are likely to experience economic stress as well. Whitebrook, Howes, and Phillips (1989) estimated that 40% of early childhood teachers leave the field each year. Whitebrook and Sakai (2003) found that more highly trained staff who earned the lowest wages and had coworkers with lower levels of training were most likely to leave their jobs.

One of the most unfortunate effects of stress may be the impact it has on relationships with children. In an effort to reduce distress, some teachers tend to withdraw from caring relationships with students (Dworkin, 2001). This is especially significant for preschool

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teachers because a warm and caring relationship with young children affects their social, self-regulatory, and cognitive development (Hamre & Pianta, 2004). Pianta and Stuhlman (2004) reported that ratings of first-grade students' externalizing problems were higher and social competence were lower if their kindergarten teacher and preschool teachers reported conflict with them. This was true even when controlling for kindergarten and preschool social functioning. Moreover, Hamre and Pianta (2001) found that negative relationships between teachers and students in kindergarten predicted children's academic and behavioral problems into eighth grade. Expulsions from preschools are significantly higher when teachers are experiencing high stress (Gilliam, 2008), presumably because teachers are less able to deal with such behavior. Stress and depression affect the quality of teachers' interactions with students (Hamre & Pianta, 2004; Wisniewski & Gargiulo, 1997). Gilliam (2008) reported that prekindergarten teachers and child care staff members who reported elevated symptoms of depression were more likely to engage in child care practices rated as less sensitive to children's needs, more intrusive, and more negative.

Teachers' relationships with other staff also affect their wellbeing. Schools with high collegiality, where staff and leadership exhibit mutual support, also have high levels of staff wellbeing (Brouwers, Evers, & Tomic, 2001; Burke, Greenglass, & Schwarzer, 1996; Talmor, Reiter, & Feigin, 2005), teaching effectiveness (e.g., Bryk & Driscoll, 1988; Lee, Dedrick, & Smith, 1991), and teachers remaining in the field (e.g., Gersten, Keating, Yovanoff, & Harniss, 2001; Miller, Brownell, & Smith, 1999).

In sum, there is strong reason to believe that early education special educators have problems with stress and related psychological problems and could benefit from an intervention that helps them reduce stress and increases mutual support among staff members. The present study documents levels of stress, depression, and burnout among staff in a preschool for children with developmental disabilities, and experimentally evaluates an Acceptance and Commitment Therapy (ACT) intervention (Hayes, Strosahl, & Wilson, 1999) to reduce stress and its related problems and increase supportiveness among staff members.

Increasing Psychological Flexibility

Acceptance and Commitment Therapy or Training (ACT) promotes acceptance of unpleasant thoughts, feelings, and sensations; encourages mindful contact with the present moment; and helps people clarify and take action in the service of their values. Psychological flexibility allows people to change or persist in their behavior in the moment to serve valued ends (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Flexibility grows amid clarity about one's values and acceptance of or defusion from one's thoughts and feelings. Acceptance connotes a willingness to have thoughts and feelings. Defusion refers to the process of seeing that one's thoughts and feelings are thoughts and feelings, not reality. When people accept and defuse their thoughts and feelings, they can commit to action in the service of their values—even if their minds tell them they cannot or should not try.

Several studies have indicated the value of ACT for work organizations in reducing stress, increasing psychological wellbeing, and increasing participants' openness to using innovative practices. In a randomized controlled trial, Bond and Bunce (2000) compared ACT workshops with an innovation promotion program aimed at helping workers identify and then creatively change sources of occupation. Participants in the ACT condition showed significantly reduced stress and reported improved psychological health. Even though the ACT condition did not target innovation explicitly, ACT recipients improved on the propensity to innovate as much as those receiving the innovation intervention.

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Varra and colleagues (2008) found that ACT significantly increased the willingness of organization members to implement evidence-based practices. Drug and alcohol counselors who participated in an ACT intervention were more psychologically flexible and more open to adopting evidence-based treatments than those who attended an educational workshop. Hayes, Bissett, et al. (2004) hypothesized that ACT training could help counselors accept their thoughts merely as thoughts, experience them as less believable, and recommit to their values in helping clients. They randomly assigned drug-abuse counselors to receive a 1-day workshop on ACT, multicultural training (a common approach to reducing negative attitudes toward stigmatized groups), or a class on biological processes of addiction. At follow-up, ACT recipients had lower scores than those in the other conditions on a measure of the believability of stigmatizing attitudes toward clients and in self-reported burnout. Moreover, reductions in believability of stigmatizing attitudes mediated effects on burnout.

Based on existing ACT research, we believe that ACT could be valuable to those providing care to young children, particularly those in more challenging positions (e.g., preschool teachers working with young children with developmental disabilities). It may be helpful to describe how the process of becoming more psychologically flexible might play out for an early childhood special educator. Difficult child behavior is ubiquitous in SE preschool classrooms. Faced with a child who is aggressive toward other children, a teacher may have negative thoughts, including feelings of disappointment and hopelessness. Inflexible attempts to control the unwanted feelings (e.g., avoiding communication with the child or child's parent, or being punitive) can lead the teacher to withdraw from the child and his or her family and miss important opportunities to take committed action in the service of the teacher's value of making a difference in children's lives. When teachers become more flexible, they become better able to defuse from their thoughts and feelings. They focus instead on values, such as making a difference in the life of a child; they become more aware of their moment-to-moment interactions with children (contact with the present moment). Because of these processes, they become better at acting in ways that are likely to help them achieve their valued outcomes.

In summary, the study has three aims. First, given the paucity of data on stress and psychological problems, we provide descriptive data on problems among a sample of early education special educators. Second, in light of the theory that the tendency to avoid unpleasant thoughts and feelings increases stress and related psychological problems, we also examined whether stress and other aspects of wellbeing are higher among those who are not psychologically flexible. Third, we evaluated the effectiveness of ACT workshops for this population in increasing their psychological flexibility and improving measures of overall psychological wellbeing, including stress and depression.

Method

Design and Participants

The impact of the workshops was evaluated using a wait-list control group design (see Figure 1). The design ensures that all participants ultimately receive treatment, while enabling comparisons between those in active treatment and those receiving no treatment (McKay, 2008). A change in intercept and/or slope for those outcomes when the first set of participants receives the intervention, while no change appears in the control group, indicates that the intervention affected outcomes. Confidence in the intervention effect gains strength through replication of the effect when the delayed control group receives the intervention.

Forty-two people took part in the study: 30 preschool program staff (17 randomized to the immediate condition and 13 to the delayed condition) and 12 affiliated family consultants (6

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randomized to each condition). We randomly assigned classroom teams, consisting of lead teachers and assistants, to receive the workshops immediately (immediate) or 3 months after the first group received them (delayed). We individually randomly assigned family consultants to the two conditions. As Figure 1 illustrates, participants completed assessments at four time points. Data collection for the second assessment began 5 weeks after the first, which was 2 weeks after those in the immediate condition completed the second intervention workshop. The third assessment began 3 months after the second assessment (3 weeks after the delayed condition's second workshop). The fourth assessment began 7 weeks after that.

The Early Education Program (EEP; http://www.earlyeducationprogram.org/index.php) was created to serve the needs of young children with developmental disabilities. About 75% of children attending EEP have a developmental disability. EEP has 13 classrooms in a northwest county of 346,560 (U.S. Census Bureau, 2009). Classrooms were distributed widely throughout the county, thus decreasing cross-condition contamination. Although in some cases there were both morning and afternoon classes in the same building, different staff members taught the classes, minimizing cross-condition contamination.

Two of the participating EEP staff members were administrative personnel who worked in the central office. The other 28 staff members were teachers or teaching assistants who worked in one of the EEP classrooms. EEP provides a half-day session that focuses on helping young children develop the cognitive, social, behavioral, and self-regulatory skills needed to achieve continuing success in school. The learning environment includes small group activities and one-on-one interactions between children and adults.

The participating family consultants worked with the families of children with disabilities in the EEP classrooms. Their work included giving guidance and support to families, including helping them respond more effectively to their children's behavioral problems.

Measures

Table 1 presents the number of items and alpha coefficients for each measure we describe. We measured the processes involved in psychological flexibility, and we measured participants' wellbeing. Participants completed the first two assessments with paper and pencil and completed the third and fourth assessments online. We changed methods because we obtained resources to create the online assessment, which was easier to administer.

Psychological flexibility—As noted earlier, psychological flexibility allows people to change or persist in their behavior in the moment to serve valued ends. Clarity about one's values and mindful acceptance of and defusion from one's thoughts and feelings promotes psychological flexibility.

We used three previously validated measures of aspects of psychological flexibility. The *Acceptance and Action Questionnaire* (AAQ) assesses experiential avoidance (EA)—the tendency of people to avoid unpleasant thoughts and feelings. Hayes, Strosahl, et al. (2004) found EA related to a wide variety of problems, including depression, anxiety, and substance abuse. Higher scores on the AAQ indicate lower levels of EA.

The *Five-Facet Mindfulness Questionnaire* (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) includes five subscales measuring different aspects of mindfulness. As Table 1 delineates, each facet relates to an aspect of psychological functioning.

The *Valued Living Questionnaire* (VLQ; Wilson & Groom, 2002) asks respondents to rate how much they live in accord with 10 values: (a) family, (b) marriage/couples/intimate

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relationships, (c) parenting, (d) friendship, (e) work, (f) education, (g) recreation, (h) spirituality, (i) citizenship, and (j) physical self-care.

Psychological wellbeing—We used six widely used and previously validated measures of psychological wellbeing. The *Maslach Burnout Inventory* (MBI; Maslach, Jackson, & Leiter, 1997) is perhaps the most widely used measure of job burnout; Table 1 defines its three subscales. The *Intrinsic Job Motivation Scale* (Warr, Cook, & Wall, 1979) assesses the degree to which people want to do their jobs well to achieve inherent satisfaction. The *Job Satisfaction Scale* (Warr et al., 1979) is a brief measure of satisfaction and stress.

The 43-item Teacher Characteristics subscale of the *Index of Teaching Stress* (ITS; Greene, Abidin, & Kmetz, 1997) assessed staff self-perceptions of students' influence and their own teaching process ($\alpha = .91$). The subscale assesses areas related to a need for support, loss of satisfaction from teaching, and frustration with parents and disruption of the teaching process. It is unique in its focus on the stress a teacher experiences in interactions with specific students. The central issues underlying the ITS are the impact of student behavior on teacher self-perception, teacher perception of the teaching process, and teacher perception of support from other adults involved. Clinically significant scores on this measure indicate a generalized sense of hopelessness and ineffectiveness in a person's role as a teacher.

The *Teacher Efficacy Scale* (TES; Gibson & Dembo, 1984) assessed teachers' perception of their effectiveness ($\alpha = .72$). Finally, we included the *Center for Epidemiological Studies–Depression Scale* (CES-D; Radloff, 1977), a widely used measure for determining depression during the previous week.

Open-ended questions about organizational change—To gauge the intervention's impact on the preschool program, approximately 2 years after the workshops, we asked supervisors and seven randomly chosen staff to anonymously answer six questions about the preschool. We asked if they had noticed any changes in (a) how people get along, (b) people's willingness to try new things, (c) people's willingness to give feedback, (d) people's willingness to take feedback from others, and (e) people's dedication to kids. In addition, we asked staff why they felt the changes had occurred. No question mentioned ACT or any of the component skills.

The Intervention

The intervention involved two 3.5-hr workshops held 2 weeks apart for the immediate group and 3 weeks apart for the delayed group. In the immediate group, 97% of participants attended the first session and 91% the second. In the delayed group, 89% attended the first session and 67% the second. Overall attendance was 93% for the first workshop and 80% for the second.

Workshop content was based on descriptions of ACT workshops previously given to work organizations (Bond & Bunce, 2000; Hayes, Bissett, et al., 2004) and on the first author's (A.B.) training and experience in providing ACT clinically. ACT uses metaphors and experiential exercises to assist people in increasing six psychological processes leading to the reduction of EA and promotion of psychological flexibility. Table 2 describes each process. Detailed descriptions of ACT are available (e.g., Bond & Bunce, 2000, 2003; Hayes, Follette, & Linehan, 2004; Hayes, Jacobson, Follette, & Dougher, 1994; Hayes, Strosahl, et al., 1999).

The first and second (G.L) authors of this article (who are married to each other) led the workshops. The first author is a clinical psychologist with more than 30 years of experience.

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He participated in numerous intervention trainings for the development of ACT in the 1980s and has published a case study description of its value for parents of children with developmental disabilities (Biglan, 1989). The second author is the director of EEP. She received training in a 2.5-day workshop conducted by the originator of ACT, Steven Hayes.

The ultimate goal of this project was to create a psychologically flexible culture within the preschool. To this end, following the workshops, the EEP director and the three supervisors continued to promote the use of ACT principles in staff meetings and supervisory contacts. One month after completing both sets of workshops, participants received a booster session, at which the presenters reviewed ACT principles. In addition, preschool supervisors modeled and applied ACT principles when training their preschool teams. For example, discussions of challenging students or implementation of new procedures included discussions of staff thoughts and feelings about the situation, acceptance of those thoughts and feelings, and promotion of their values in working with children, colleagues, and parents.

Results

Descriptive Data

As there are normative data for the CES-D and the MBI, we can estimate the level of burnout and depression among participants before the intervention. On the CES-D, 50% were at or above the cutting score of 16. On the MBI, 73.81% reported emotional exhaustion (EE) at a level above the top third of the normative distribution. However, on the *Personal Accomplishment Scale*, only 2.38% of the teachers involved were below the cut point for the bottom third of normative distribution, which indicated a high level of perceived achievement. Thus, although many teachers reported feeling depressed and emotionally exhausted, most also reported having a sense of accomplishment in their work.

Correlations Between Psychological Flexibility and Wellbeing

As Table 3 shows, measures of psychological flexibility were related to wellbeing in expected directions. EA, as indicated by low scores on the AAQ, accompanied significantly higher levels of teacher stress ($r = -.49$, $p = .002$) and depression ($r = -.59$, $p < .001$) and lower self-reported personal work-related accomplishment ($r = .33$, $p = .033$). Mindfulness as measured by the FFMQ was associated with lower levels of depression ($r = -.59$, $p < .001$) and higher levels of personal accomplishment ($r = .41$, $p = .009$). The Acting With Awareness subscale performed similar to the overall FFMQ scale, relating to lower levels of depression ($r = -.54$, $p < .001$) and higher levels of accomplishment ($r = .38$, $p = .020$). The Nonreactivity to Inner Experience subscale was also associated with less depression ($r = -.57$, $p < .001$) and more accomplishment ($r = .39$, $p = .016$); in addition, it showed an association with lower levels of EE ($r = -.44$, $p = .006$) and stress ($r = -.34$, $p = .037$). The Observing, Noticing, and Attending to Inner Experience subscale was associated with higher levels of job motivation ($r = .44$, $p = .006$), whereas the Nonjudging of Inner Experience subscale was associated with lower levels of depression ($r = -.52$, $p = .001$). We also found significant associations for VL (VLQ) with higher levels of personal accomplishment ($r = .37$, $p = .016$) and lower levels of depression ($r = -.68$, $p < .001$).

Effects of the Intervention

Participants' workshop ratings—Participants generally felt quite satisfied with the workshops. In the immediate condition, 76% said the content was the “best ever” (19%) or outstanding (57%). For delayed, 82% said it was the “best ever” (19%) or outstanding (63%).

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Data analysis—We analyzed data for all 42 participants using an intent-to-treat model, even though 4 teachers attended no workshops.

For the outcome analysis, we used Latent Growth Modeling (LGM) to assess workshop effects. LGM allows analysis of change over time for individuals and takes advantage of the statistical power involved in analyzing multiple time points (Curran & Muthén, 1999; Muthén & Curran, 1997). We followed similar procedures for analyzing a wait-list control design as reported by Irvine, Biglan, Smolkowski, Metzler, and Ary (1999). We created a model of change over time for each condition that specified the expected change in dependent variables as a function of exposure to the intervention. Thus for the immediate group, we expected change to occur between the first and second assessments; for the delayed group, we expected change between the second and third assessments. The measure of this effect was the slope for change over time. As several studies of ACT interventions have shown continued improvement in follow-up, we set the weights on this factor to represent continued growth postintervention (Muthén & Curran, 1997). For the immediate group, the weights were 0 preintervention and 1, 2, and 3 at three postintervention assessments. For the delayed group, the weights were 0 at Times 1 and 2, and were 1 and 2 at the two postintervention times (Times 3 and 4). Thus, the models assumed that people continued to show improvement at each postintervention time point.

We evaluated model fit separately for each condition using traditional structural equation modeling and then we tested the fit of a multisample model combining both conditions. The comparative fit index (CFI) assessed model fit, using values of 0.90 to 0.94 as acceptable, 0.95 to 0.99 as close, and 1.00 as exact (Hu & Bentler, 1998, 1999). Confidence that an intervention had an effect comes from model fit and a significant effect factor. Our confidence is greatest when the immediate, delayed, and combined models all fit. However, given the study's small *N*, the models that combine immediate and delayed data may fit at times when the individual models do not, due to greater statistical power provided by the full sample.

Effects on psychological flexibility—Table 4 presents the results of these analyses. We found effects on three subscales of the FFMQ. For the Nonreactivity to Inner Experience subscale, the model fit very well for the immediate group (CFI = 1.00), but there was no significant change in slope. For the delayed condition, the model fit adequately (CFI = 0.984), and there was a significant change in slope ($p = .029$). Thus, nonreactivity did not increase significantly following the workshops for the immediate condition but did so for the delayed condition. However, change in slope was significant for the combined model (CFI = 0.984).

For the Nonjudging of Experience subscale, we noted a significant change in slope for the immediate condition ($p = .007$) where model fit was excellent (CFI = 1.00). Slope approached significance for the delayed condition ($p = .12$) where model fit was also good (CFI = 0.981). The multisample model fit the data well (CFI = 1.00) and change in slope was significant ($p = .001$), indicating that the workshops increased people's ability not to judge their thoughts and feelings.

There was also evidence that the workshops increased participants' ability to attend to inner experiences. For the Observing/Noticing/Attending to Inner Experience subscale, the model for the immediate condition fit very well (CFI = 1.00), with a significant change in slope ($p = .004$). The model fit for the delayed condition was marginal (CFI = 0.91), and change in slope only approached significance ($p = .11$). Yet the multisample model fit well (CFI = 1.00), and change in slope was significant ($p = .002$). There were no effects on the AAQ or the VLQ.

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Effects on wellbeing—LGM analyses indicated that the workshops affected the ITS and the TES. The ITS model fit was adequate for immediate and delayed (CFIs = 0.94 for each model) and was better for the multisample model (CFI = 0.98). For each model, the change in slope was significant (p = .001, .007, and .045, respectively). Thus, the workshops were instrumental in reducing experienced stress.

As Table 5 shows, both the separate models for the TES and the multisample model fit the data (CFIs of 0.96, 1.00, and 1.00, respectively). The slope was not significant for the immediate condition but was for the delayed (p = .05) and the multisample (p = .018) conditions, providing evidence that the workshops led to increased teaching efficacy.

Qualitative reports on changes in the culture of the preschool—Table 6 presents the responses of the seven staff to open-ended questions about changes at the preschool. As shown, most noticed positive changes in the preschool and attributed them to the ACT-related processes.

Respondents indicated that people were getting along better. One supervisor said, “There has been a real shift in the sensitivity, willingness to work with people, and overall effort to support people, come as they may.” Supervisors noted that teachers were more open to feedback during employee evaluations and that coworkers offered a greater number of positive and constructive comments. Leaders also noted that, with encouragement, staff was more open to try new procedures and curricula to promote positive behavior and social skills. Respondents credited many changes to an increased willingness to accept thoughts and feelings and to people “asking the question—does this behavior/act of mine lead in the direction of my values?” One supervisor noted that staff practiced mindfulness in classrooms and meetings, and that reminding others of the ACT principles before communication and feedback facilitated better results.

Discussion

The results of this pilot study suggest that brief ACT workshops can increase acceptance of inner experience, reduce stress, and increase feelings of efficacy among early childhood special educators. Moreover, not only did these benefits continue at the first follow-up but also the best fitting models showed that participants experienced further improvement over time. The workshops also may have helped to foster an open and respectful culture within participating preschools that facilitated being supportive, working cooperatively, giving and receiving feedback, and embracing innovation.

It is interesting that the ACT intervention affected ratings of teaching self-efficacy. Items on the TES have to do with whether the person believes that his or her actions can have desired effects on students. For example, “The influences of a student's home experiences can be overcome by good teaching.” ACT encourages people to “hold their beliefs lightly” and to act in the service of their values, even when their thoughts tell them they can't succeed. In contrast, traditional self-efficacy theory suggests that increasing one's beliefs about self-efficacy leads to increased action (Bandura, 1985). Apparently, encouraging people to defuse from their thoughts and focus on their actions increases the degree to which they endorse statements about their ability to make a difference.

We note that the time between the workshops and the first postassessment may have been too brief. Other ACT research suggests that the benefits of ACT often take time to appear (Bach & Hayes, 2002; Gifford et al., 2004; Hayes, Bissett, et al., 2004; Lillis & Hayes, 2007; Masuda et al., 2007; Twohig, Hayes, & Masuda, 2006). People may become more psychologically flexible initially, but the full benefit may emerge only when they deal with

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important life issues. For example, two coworkers who have been in conflict may continue to feel hurt and angry toward each other, even after they have chosen to pursue values of respect and cooperation and have begun to act on those values in their interactions. Changes in feelings may come later.

Although the current study does not provide experimental evidence of the impact of ACT on teaching practices, the preschool's experience is consistent with reports in the literature of the benefits of ACT in increasing the use of innovative or evidence-based practices (Hayes, Bissett, et al., 2004; Varra et al., 2008). In the year following the workshops, EEP implemented Positive Behavior Support (Early Childhood PBIS, 2011) and the PATHS Preschool Program (Promoting Alternative Thinking Strategies; Domitrovich, Cortes, & Greenberg, 2007). Implementation of each program met with less staff resistance than had previously been experienced. ACT training also appeared to make it easier for staff to implement emotion coaching (Greenberg, 2002). When children become distressed, their distress often produces emotional reactions in their caregivers. Such reactions can get in the way of providing the skilled and caring interactions that can help the child learn about their emotions and the circumstances that have brought on the emotion (e.g., “Oh you are angry because he took your toy.”). The increased psychological flexibility of staff appears to have helped them to control their own emotional reactions and to help the children learn about their emotions, self-regulate, and learn ways to deal with difficult situations.

Findings presented here generally confirm expectations regarding ACT-relevant measures of EA, mindful awareness, and VL. All three show an interrelationship to higher levels of mindfulness; we found VL associated with less EA.

Results also support several hypothesized relationships between ACT-associated measures and teacher psychological outcomes. EA and VL were associated with lower levels of stress and depression and higher levels of personal accomplishment; mindfulness was associated with lower levels of depression and higher levels of personal accomplishment.

This study provides further documentation of the psychological needs of those who work with young children, especially children with special needs. The interrelationships among teachers' psychological problems were apparent: Depression showed a strong connection to higher levels of stress and EE and with lower levels of personal accomplishment and teaching efficacy. Half of the preschool participants reported depression levels above the cutting score for a diagnosis of depression. This concurs with other studies indicating high levels of depression among teachers (Jurado, Gurpegui, Moreno, & de Dios, 1998), especially those working with difficult students (Abel & Sewell, 1999; Byrne, 1998). Not all participants work directly with children but other factors could contribute to these high rates of depression, including the stress of working with special needs children, low pay, large time demands, and the fact that most participants are women, who have higher rates of depression than men (Kornstein, 1997; Weissman & Olfson, 1995).

Although depression was associated with significantly higher levels of EE and lower levels of personal accomplishment, it did not preclude a sense of instructional achievement. Based on commonly accepted cut points for categorizing respondents on the CES-D and MBI-EE scales, the majority of the teachers surveyed were both depressed and emotionally exhausted but most still reported feeling a sense of personal accomplishment in their work. This is especially encouraging given the ACT emphasis on still moving forward on valued courses of action while accepting negative thoughts and feelings. Whatever the causes, the evidence indicates that further research and practical steps are necessary to reduce these high depression rates. Considerable evidence cites teacher stress and depression as risk factors for

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teachers leaving the profession (Miller et al., 1999), a substantial loss given the high cost of replacing them (Alliance for Excellent Education, 2005).

To sum up, it appears that we can help to reduce the high levels of stress among preschool special educators through workshops focused on increasing psychological flexibility by increasing mindfulness and values-focused action. Further research on the value of this type of intervention for SE preschool teachers will be helpful.

Limitations

This study has distinct weaknesses. We randomly assigned teams (teachers and aides) rather than individuals to condition. The analysis did not consider this grouping, which may have introduced a bias due to the covariance among members of the same group (Murray & Short, 1997). Also, the analysis did not account for the fact that people received the intervention in groups, which may have introduced further covariance among participants. Thus, we provide only preliminary evidence on the value of ACT workshops. It may justify further research on their impact but does not support dissemination to nonresearch settings at this time.

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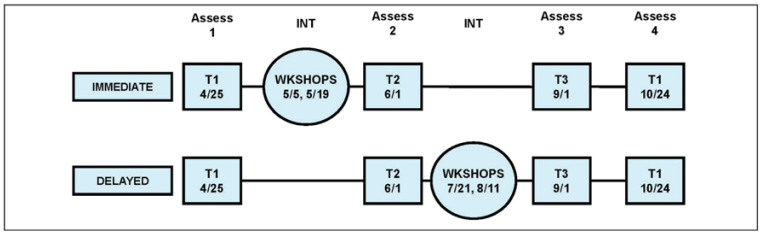

Figure 1.
Study design.

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Table 1

Reliability for Measures of Psychological Processes and Teacher Wellbeing

	No. of items	α
Psychological processes		
AAQ (Hayes, Strosahl, et al., 2004)	16	.84
FFMQ (Baer et al.,2006)	39	.98
Acting With Awareness subscale	8	.96
Describing Inner Experience subscale	8	.98
Observing/Noticing/Attending to Inner Experience subscale	8	.94
Nonjudging of Experience subscale	8	.98
Nonreactivity to Inner Experience subscale	7	.96
VLQ (Wilson & Groom, 2002)	10	.82
Wellbeing		
MBI (Maslach et al., 1997)	22	
Educators' Survey		
EE	9	.90
DP	5	.72
EE and DP	14	.82
PA	8	.84
IJM (Warr et al., 1979)	6	.61
JSS (Warr et al., 1979)	10	.78
ITS (Greene et al., 1997)	43	.91
TES (Gibson & Dembo, 1984)	30	.72
CES-D (Radloff, 1977)	20	.93

Abbreviations: AAQ, Acceptance and Action Questionnaire; FFMQ, Five-Facet Mindfulness Questionnaire; VLQ, Valued Living Questionnaire; MBI, Maslach Burnout Inventory; EE, emotional exhaustion; DP, depersonalization; PA, personal accomplishment; IJM, Intrinsic Job Motivation Scale; JSS, Job Satisfaction Scale; ITS, Index of Teaching Stress; TES, Teacher Efficacy Scale; CES-D, Center for Epidemiological Studies–Depression Scale.

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Table 2

Workshop Components, With Descriptions and Length of Each

Component	Description	Workshop	Length (min)
Session 1			
Introduction	Overview, introductions, review of rules and expectations; confidentiality and Institutional Review Board (Human Subjects)	1	15
What happens as we try to make a difference?	Discuss how people react to the children, other teachers, parents, and work supervisors. Discuss ways that people attempt to cope with stress	1	45
Hexaflex	Introduce ACT 6-component diagram and explain each component	1	10
Values exercise	Break into pairs to review values in work with children	1	35
Acceptance	Present the concept of accepting unpleasant thoughts and feelings	1	40
Committed action	Discuss committed action in the service of one's values, even when unpleasant	1	15
Defusion	Presentation of the *Monsters on the Bus* metaphor	1	25
Taking action	Participants specify committed actions they might take between the two sessions	1	10
Session 2			
Mindfulness exercise	Participants close their eyes and notice thoughts and feelings	2	15
Using the Hexaflex	Review each component of psychological flexibility	2	15
Your feedback	People describe experiences between the two workshops	2	30
Observer self	Use the *Chessboard* metaphor and *Observer Self* exercise (Hayes, Bissett, et al., 1999) to help people get a sense of the part of them that just observes	2	40
Evaluation, relating, and avoidance	Discuss and illustrate one's tendency to evaluate and emphasize negatives. Include how evaluations prevent honest feedback (e.g., typical situations in the preschools). Complete a defusion exercise	2	45
Relationships with others	Write words on a flip chart to characterize the shared values of the preschool	2	25
Eye contact exercise	Pair up for eye contact exercise to make contact, despite thoughts and feelings	2	15
Closing	People have an opportunity to share their reactions to the workshop	2	5

Abbreviation: ACT, acceptance and commitment therapy.

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Table 3

Correlations for ACT-Relevant and Teacher Outcome Measures

		ACT-related measures							
Teacher outcome measures		**AAQ**	**FFMQ**	**FFMQ Aware**	**FFMQ Describe**	**FFMQ Observe**	**FFMQ Nonjudge**	**FFMQ Nonreact**	**VLQ**
MBI (emotional exhaustion)	Correlation	−.284	−.264	−.285	−.153	.189	−.075	−.436**	−.234
	Significance	.068	.100	.083	.347	.243	.647	.006	.136
	n	42	40	38	40	40	40	38	42
MBI (depersonalization)	Correlation	−.168	−.107	−.224	.023	−.195	−.035	−.039	−.042
	Significance	.288	.511	.176	.889	.228	.829	.817	.790
	n	42	40	38	40	40	40	38	42
MBI (accomplishment)	Correlation	.329*	.407	.376	.352	.166	.082	.389*	.370*
	Significance	.033	.009	.020	.026	.307	.615	.016	.016
	n	42	40	38	40	40	40	38	42
IJM	Correlation	−.148	−.033	.011	.277	.436**	−.403*	−.252	−.109
	Significance	.356	.843	.947	.088	.006	.011	.132	.499
	n	41	39	37	39	39	39	37	41
JS	Correlation	.080	.047	−.138	.165	.127	−.100	.073	.108
	Significance	.615	.773	.410	.308	.435	.539	.663	.497
	n	42	40	38	40	40	40	38	42
ITS	Correlation	−.485**	−.293	−.189	−.108	−.230	−.190	−.344*	−.310
	Significance	.002	.071	.263	.513	.159	.247	.037	.055
	n	39	39	37	39	39	39	37	39
TES	Correlation	.014	.130	.310	.024	−.109	−.074	.039	.219
	Significance	.935	.432	.062	.884	.509	.656	.820	.180
	n	39	39	37	39	39	39	37	39
CES-D	Correlation	−.585**	−.592	−.544	−.107	.034	−.522**	−.571**	−.679**
	Significance	.000	.000	.000	.512	.834	.001	.000	.000
	n	42	40	38	40	40	40	38	42

Abbreviations: ACT, acceptance and commitment therapy; AAQ, Acceptance and Action Questionnaire; FFMQ, Five-Facet Mindfulness Questionnaire; VLQ,Valued Living Questionnaire; MBI, Maslach Burnout Inventory; IJM, Intrinsic Job Motivation; JS, Job Satisfaction; ITS, Index of Teaching Stress; TES, Teaching Efficacy Scale; CES-D, Center for Epidemiologic Studies–Depression Scale.

* $p < .05$.

** $p < .01$.

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Table 4

Latent Growth Modeling Results for ACT-Related Measures (T1–T4): Immediate, Delayed, Combined (Fixed Effects)

	Immediate (*n* = 23)				Delayed (*n* = 19)				Combined (*n* = 42)			
Measure	**Est.**	***SE***	**C.R.**	**Significance**	**Est.**	***SE***	**C.R.**	**Significance**	**Est.**	***SE***	**C.R.**	**Significance**
Nonreactivity to Inner Experience subscale												
Comparative fit index	1.000				0.984				0.984			
Coefficient: Intercept value	22.190	0.998	21.997	<.001	21.588	0.903	24.159	<.001	21.675	0.695	31.166	<.001
Coefficient: Slope value	0.279	0.252	1.108	.268	1.104	0.505	2.186	.029	0.543	0.211	2.570	.010
Nonjudging of Experience subscale												
Comparative fit index	1.000				0.981				1.000			
Coefficient: Intercept value	28.435	1.305	21.840	<0.001	28.412	1.366	20.920	<.001	28.425	0.952	29.692	<.001
Coefficient: Slope value	1.021	0.378	2.702	.007	1.051	0.671	1.567	.117	0.985	0.296	3.328	<.001
Observing/Noticing/Attending to Inner Experience subscale												
Comparative fit index	1.000				0.910				1.000			
Coefficient: Intercept value	27.870	1.212	22.759	<.001	29.06	0.949	30.514	<.001	28.110	0.795	35.377	<.001
Coefficient: Slope value	1.030	0.358	2.878	.004	0.699	0.435	1.609	.108	0.784	0.248	3.164	.002

Abbreviations: ACT, acceptance and commitment therapy; Est., parameter estimate; C.R., Est./*SE*.

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Table 5

Latent Growth Modeling Results for Teacher Outcome Measures (T1–T4): Immediate, Delayed, Combined (Fixed Effects)

	Immediate (*n* = 23)				Delayed (*n* = 19)				Combined (*n* = 42)			
Measure	**Est.**	***SE***	**C.R.**	**Significance**	**Est.**	***SE***	**C.R.**	**Significance**	**Est.**	***SE***	**C.R.**	**Significance**
Index of Teaching Stress												
Comparative fit index	0.938				0.942				0.980			
Coefficient: Intercept value	128.73	5.444	24.28	<.001	115.27	4.221	19.22	<.001	123.10	6.103	30.70	<.001
Coefficient: Slope value	−5.36	1.556	−3.44	<.001	−4.54	1.123	−4.03	.007	−4.57	2.282	−2.00	.045
Teacher Efficacy Scale												
Comparative fit index	0.960				1.000				1.000			
Coefficient: Intercept value	43.318	0.910	47.446	<.001	41.824	1.314	32.282	<.001	42.704	0.794	53.801	<.001
Coefficient: Slope value	0.512	0.356	1.441	.150	1.149	0.634	1.814	.050	0.649	0.275	2.360	.018

Abbreviations: Est., parameter estimate; C.R., Est./*SE*.

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Table 6

Responses from a Random Sample Regarding Changes in the Preschool

Question and open-ended responses	Number of responses	
Have you noticed any changes in the preschool regarding how people get along?	Yes = 6	No = 1
People are more caring and sensitive	4	
More respectful of one another	2	
People show more support to each other	1	
Greater acceptance of one another	1	
More mindful of one another	1	
Better leadership	1	
Greater focus on team values	1	
People are stressed and unhappy	1	
Have you noticed any changes in willingness for people at the preschool to try new things?	Yes = 6	No = 0
Better attitudes/more energy/greater willingness for a new curriculum	4	
More support from leadership provided for trying new things	1	
More positive feedback and compliments given	1	
People do not easily change	1	
More openness and respect when changes take place	1	
More following through on trying new things	1	
More talking among coworkers to enhance children's performance	1	
Greater professionalism	1	
Have you noticed any changes in willingness to give feedback?	Yes = 6	No = 0
More complements and positive feedback	2	
Expressing concerns in a more positive/kind manner	2	
More people are giving feedback, but there is little follow through on it	1	
More are giving feedback, but it is still hard for a lot of us to do	1	
Leadership is acknowledging and using people's talents	1	
Leadership has offered a model on how to provide feedback	1	
Realized that giving feedback is positive and constructive, not hurtful	1	
Giving positive feedback is a team goal	1	
Have you noticed any changes in willingness to take feedback?	Yes = 7	No = 0
Feedback given in a more positive way is easier to accept/receive	4	
Now daily feedback and discussions about feelings are happening	1	
Willingness has increased as we are working together on common values	1	
People are noticing others' strengths more	1	
Talking about feelings has changed how people deal with problems	1	
Have you noticed any changes in people's dedication to children?	Yes = 6	No = 0
The staff is very dedicated/devoted to and cares about the children	4	
Changes in the preschool environment to enhance children's skills	2	
Shared value of making a difference in children's lives	1	
Increased willingness to try new curriculum to promote friendship skills	1	
Staff is more thoughtful about children's emotions	1	

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Question and open-ended responses	Number of responses
Why do you think changes have occurred in the preschool?	
More caring/acceptance/respect/support for one another	2
Accepting thoughts and feelings	2
Practicing mindfulness	2
Greater compassion	1
It is very positive	1
Focusing on values	1
People are more aware of other's values and beliefs	1
Feedback given and received in a calmer manner	1
More acceptance about other people's situations	1
Staff is more rushed and stressed this year	1
Reminders of ACT principles and noticing changes that have occurred	1
It has made a huge difference in my life	1

Abbreviation: ACT, acceptance and commitment therapy.