

ACCEPTANCE-BASED INTERVENTIONS FOR DIRECT CARE STAFF:  
AN ASSESSMENT OF NEED

A Thesis  
by  
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## **Abstract**

### ACCEPTANCE-BASED INTERVENTIONS FOR DIRECT CARE STAFF: AN ASSESSMENT OF NEED

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Direct care staff play a vital and integral role in the lives of the individuals they support. Research suggests that direct care staff working with individuals with intellectual and developmental disabilities experience a significant amount of work-related stress. To combat this, organizations often employ stress reduction workshops to help staff better respond to stressful situations or manage their reactions to situations. Research on such workshops has produced mixed findings. The current study had three objectives: (1) further explore relations between psychological flexibility, psychological distress, and job satisfaction among direct care staff serving individuals with intellectual and developmental disabilities, (2) determine the potential utility of a modified version of psychological flexibility specifically designed around the role of direct care staff, and (3) extrapolate the potential utility of a stress management workshop for direct care staff based on the processes within Acceptance and Commitment Therapy. For objective 1, a strong relation was found between psychological distress and both measures of psychological flexibility. Additionally, a small relation was found between job satisfaction and psychological flexibility, and a moderate relation was

found between job satisfaction and the direct care staff measure of psychological flexibility. For objective 2, evidence was shown that a potential utility does exist for a measure of psychological flexibility specifically designed around the role direct care staff. For objective 3, results showed that there is a significant proportion of individuals working as direct care staff deemed to be “at risk”, and thus, more likely to benefit from a stress management intervention based on the processes within Acceptance and Commitment Therapy.

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Acceptance-Based Interventions for Direct Care Staff:

An Assessment of Need

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### Abstract

Direct care staff play a vital and integral role in the lives of the individuals they support. Research suggests that direct care staff working with individuals with intellectual and developmental disabilities experience a significant amount of work-related stress. To combat this, organizations often employ stress reduction workshops to help staff better respond to stressful situations or manage their reactions to situations. Research on such workshops has produced mixed findings. The current study had three objectives: (1) further explore relations between psychological flexibility, psychological distress, and job satisfaction among direct care staff serving individuals with intellectual and developmental disabilities, (2) determine the potential utility of a modified version of psychological flexibility specifically designed around the role of direct care staff, and (3) extrapolate the potential utility of a stress management workshop for direct care staff based on the processes within Acceptance and Commitment Therapy. For objective 1, a strong relation was found between psychological distress and both measures of psychological flexibility. Additionally, a small relation was found between job satisfaction and psychological flexibility, and a moderate relation was found between job satisfaction and the direct care staff measure of psychological flexibility. For objective 2, evidence was shown that a potential utility does exist for a measure of psychological flexibility specifically designed around the role direct care staff. For objective 3, results showed that there is a significant proportion of individuals working as direct care staff deemed to be “at risk”, and thus, more likely to benefit from a stress management intervention.

## Acceptance-Based Interventions for Direct Care Staff:

### An Assessment of Need

Direct Care Staff (DCS) are the individuals that care for and support persons with intellectual or developmental disabilities (IDD) in residential programs and day-treatment settings. Staff working in this area have an assortment of daily tasks, as the job generally is quite demanding with various roles and responsibilities. Direct care staff in day treatment settings have responsibilities that focus on assisting clients in aspects of daily life, including helping with daily living activities (e.g., money management, shopping, appointments), assisting in job training and educational skills, implementing behavior support plans, and providing general supervision (Carnaby & Cambridge, 2002). Staff working in residential and long-term care facilities have many of the responsibilities previously described, as well as those for more basic care (e.g., hygiene maintenance, feeding) since many of the individuals served in these settings have more significant or pronounced impairments. The specifics of the DCS position vary greatly depending on client characteristics. For example, assisting some individuals with mealtime might be as simple as supervising meal preparation whereas for individuals with fewer skills, assistance might include feeding a client.

Direct Care Staff have a vital and integral role in both the lives of the individuals they support and the organization for which they work. From the caregiving perspective, DCS in residential services have a significant role in caring for individuals with IDD, as they are the ones working with the individuals on a daily basis. In fact, one could argue that they are the organization's most valuable resource. The quality of life and well being of the individuals served is directly related to the quality of care provided (Larson, Hewitt, & Lakin, 2004). Hence, high quality services will produce the best possible outcomes and the

individual's highest quality of life. From the organizational perspective, DCS account for approximately three-fourths of the total expenditures in residential services for individuals with developmental delay (Davies, Felce, Lowe, & de Paiva, 1991). Therefore, one could say that the maintenance and survival of the organization falls on the fundamental role of DCS.

Research has shown that individuals serving as caregivers for others often experience heightened levels of stress (Dyer & Quine, 1998). For example, Skirrow and Hatton (2007) found that out of the populations serving in the caregiving role, staff who work in IDD settings were at an above average likelihood to experience a heightened level of work-related stress. This could be due to individuals with IDD presenting a unique and uncommon set of challenges, in addition to the various physical and emotional demands typically assigned to caregivers. Similarly, Hatton et al. (1999) reported that approximately a third of individuals working as DCS report clinically significant levels of psychological distress. Staff who support individuals with IDD face high levels of stress for a variety of reasons including but not limited to the challenging nature of the work and the fact that staff have to handle both the difficulties that occur in their own lives, as well as those in the lives of the clients they serve. Therefore, staff's ability to understand and cope with these stressors and situations plays a significant role in their levels of both general stress and psychological distress.

### **Work Related Stressors**

Research suggests that DCS working with individuals with IDD experience a significant amount of work-related stress (Buckhalt, Marchetti, & Bearden, 1990; Devereux, Hastings, & Noone, 2009). Previous research has shown that individuals working as health care professionals experience more stress, as well as different stressors, than individuals working in other organizational settings (Cushway & Tyler, 1994; Firth-Cozens & Payne,

1999). As noted earlier, within the health care profession, DCS serving individuals with IDD have been shown to face an even more specific collection of stressors and challenges due to the specific demands experienced within this type of work (Rose, 1999). This high quantity of stressors, in turn, has the ability to create negative outcomes for all parties involved- the DCS, individuals he or she supports, colleagues, and the organization overall. In regards to the individuals being served, Rose (1999) documented that staff with higher self-reported levels of stress engaged in fewer interactions and less communication with residents. Adding to this, Hastings (1995) demonstrated that staff's emotional reaction to a client's challenging behaviors had a significant impact on how staff interacted with these clients moving forward. From the perspective of the DCS, co-workers, and the organization, negative outcomes have been shown to occur in the form of higher than average rates of attrition, absenteeism, and turnover (Thompson & Rose, 2011).

A 2012 survey by the American Healthcare Association found the turnover rate for DCS to be 50%. Turnover rates for DCS range from 43% to 84% for residential settings and from 33% to 86% in day treatment settings (Larson & Hewitt, 2005). High turnover, of course, can lead to additional job-related stressors for those who remain, which then occur on top of the job demands that were already a part of their defined role. Because of the prevalence and impact of stress on DCS, research has been conducted to better understand the stressors contributing to turnover. Examples of stressors faced by staff include ambiguous or conflicting job roles, inconsistent workloads and schedules, lack of involvement in decision-making, client related stressors, and low extrinsic rewards such as pay and benefits.

**Role Ambiguity and Conflict**

Role ambiguity refers to a lack of knowledge about the most effective job behaviors involved in a role (Ilgen & Hollenbeck, 1991; Jackson & Shuler, 1985). This occurs when circumstances arise in which staff are presented with insufficient or unclear information to correctly perform one's duties. As an example, imagine a staff person who is asked to fill in during mealtime for an individual the DCS has no experience working with. If the DCS is told to "help" the individual, the role of help may not have been clearly defined and the DCS may be unsure about whether or how to assist the person in eating (e.g., feeding the person, assisting in cutting food), what the person should eat, or the amount that should be consumed.

Role conflict is defined as the incompatibility of job behaviors due to conflicting information, leaving the individual unable to do everything expected of them (Jackson & Shuler, 1985). Normally this occurs when there are discrepancies in job demands due to information coming from different managerial staff. As an example, a DCS might be told by a supervisor to help an individual with the bedtime routine, and then asked by another supervisor to watch several residents in the living area at that same time. This conflict leaves the DCS open to improperly completing one, if not both of the tasks, creating potentially punitive effects for a situation in which there was no right decision. When DCS do not have sufficient information or the proper guidance in roles such as these, the likelihood of experiencing psychological strain increases (Cooper, Dewe, & O'Driscoll, 2001).

**Inconsistent Work Schedules**

Ever-changing work schedules and inconsistencies in the amount of hours worked per week also can contribute to the high rates of turnover seen in the DCS position. Examples

include increased long hours on the job, extended workloads, and changing shift patterns (White, Edwards, & Townsend-White, 2006). Most DCS, particularly those working in non-residential settings work one-on-one with a specific client. Therefore, if the client is ill or does not need supports for a day (e.g., goes on a trip with family), then the DCS does not work, and thus does not receive pay. Also, the number of supported hours allocated to individuals with IDD often has the potential to be changed, especially for those being served in day treatment settings. Decisions on this matter are made outside of the organizations control and are based on outside evaluations in regards to protocol requirements for eligibility to receive services. When a reduction in the number of supported hours occurs, the employees providing these services have two options: they can either attempt to pick up hours from other places within the organization (e.g., filling-in for a staff person who is absent, working with other clients) or they can work fewer hours per week. This creates a high level of ambiguity, as many employees are unable to count on a set amount of hours worked per week.

### **Client-Related Stressors**

Direct care staff working with individuals with IDD are often involved in challenging work. Individuals with IDD often have significant social behavioral, cognitive, or medical concerns, putting them at a greater likelihood of exhibiting challenging behaviors, which can be directed to themselves (e.g., self-injurious behavior) or others (e.g., aggressive behavior, destructive behavior; Hatton, Brown, Caine, & Emerson, 1995; Mitchell & Hastings, 2001). For example, Buckhalt et al. (1990) investigated client-related stressors with a sample of 136 DCS working in a residential facility setting. They found that the highest endorsed client-related stressor was aggressive behavior. Other endorsed stressors included client's

unpleasant habits (e.g., lack of basic hygiene, inappropriate behaviors, etc.), low level of self-care, refusal to function up to their perceived ability level, and dependence on DCS.

Direct Care Staff are often exposed to physically and emotionally taxing situations (Blumenthal, Lavender, & Hewson, 1998). For individuals with behavioral challenges, a behavior support plan is typically in place delineating support steps to be followed.

Robertson et al. (2005) found that DCS experience lower levels of distress and higher levels of job satisfaction when a behavior support plan or treatment protocol is in place.

Unfortunately, many DCS have not been well trained in behavior support strategies in general or in a client's specific support protocol, and staff often handle situations according to their own best judgment. When these difficult situations do not go well, staff may experience significant levels of work-related stress (Skirrow & Hatton, 2007).

### **Low Pay and Benefits**

The 2013 Bureau of Labor Statistics reported that DCS make an average of \$10.09 per hour (BLS, 2013). To put this in perspective, fast food and counter workers have a mean hourly wage of \$10.15 per hour. This puts many DCS, working at or below the national poverty rate (Larson & Hewitt, 2005). Low pay for the position makes it difficult to both recruit and retain high quality staff. It thus is no surprise that Buckhalt et al. (1990) found that the overall highest rated source of stress for DCS was low salary, with other studies replicating this finding. As less than two-thirds of DCS are full time employees for the organization at which they work (Office of the Assistant Secretary for Planning and Evaluation, 2006), many DCS may need to hold down multiple jobs. This, coupled with the already low rate of pay, makes it hard for the organization to hire and retain highly skilled employees for the long term. Regarding benefits, because so many DCS positions are part

time, many individuals working in the field are not covered by organization-sponsored healthcare packages. This factor alone can create excess strain for the employee, as they must then look to outside sources for healthcare or run the risk of living without it. In fact, in 2014 only 47% of DCS were covered by an employee-sponsored health insurance package (Paraprofessional Healthcare Institute, 2014). In North Carolina, it was estimated that 30% of DCS did not have health insurance for all or some period of time between 2010 and 2012 (Paraprofessional Healthcare Institute, 2014).

Because of the high job demands, numerous stressors, and low external incentives, many individuals seek employment in other fields or settings, and those that do not are at a heightened risk to experience significant levels of workplace stress.

### **Workplace Stress**

Workplace stress is an individual's response to the demands and stressors of their job that occur when the demands and stressors are not aligned with their abilities and knowledge, resulting in coping difficulties (Lazarus & Folkman, 1984; World Health Organization, 2015). Research has shown that the impact of work-related stress stretches far outside the walls of the organization, creating negative consequences in the short and long term (Schulz, Visintainer & Williamson, 1990). Stress can occur in different types and forms including acute stress, episodic acute stress, and chronic stress (American Psychological Association [APA], 2015).

Out of these types, chronic stress is the most commonly seen in DCS. Chronic stress has been defined as stress that lasts for a long period of time and co-occurs repeatedly or continuously typically due to the presence of ongoing stressors (Baum, Garofalo, & Yali, 1999). Chronic stress has been shown to increase the likelihood of developing chronic

diseases such as cardiovascular disease, diabetes, and cancer (Melamed, Shirom, Toker, Berliner, & Shapiro, 2006). Along with this, the caregiving role has been shown to lead to higher risks for various types of pathologies, including depression, anxiety disorders, sleep difficulties, and eating disorders (Song & Singer, 2006).

Over the last couple of decades, workplace stress has become an increasingly popular topic. This has led to various types of stress management interventions having been proposed to decrease the detrimental costs of stress for both the organization and its employees.

### **Stress Management Interventions**

Research has shown that workplace stress results in considerable financial cost for both the individual and the organization. In the United States, it has been estimated that employee stress costs organizations between \$200-\$300 billion per year (Adams, 2009). At the organizational level, the monetary impact of workplace stress can be felt across various areas, including increases in health care costs, high rates of absenteeism, and high rates of employee turnover. In the United States alone, Adams (2009) reported that as many as 550,000,000 workdays are lost and as much as 40% of employee turnover can be attributed to workplace stress and stress-related factors.

One way organizations have tried to combat this cost is through the use of stress management programs to increase the psychological wellbeing of their staff. These programs have been referred to as stress management interventions (SMIs). Stress management interventions can be defined as any activity or program initiated by an organization that focuses on reducing the presence of work-related stressors and/or assisting individuals to minimize the negative outcomes of exposure to these stressors (Ivancevich, Matteson, Freedman, & Phillips, 1990).

Stress-management interventions can be conceptualized within a multi-tiered system consisting of primary, secondary, and tertiary interventions. Primary interventions are designed to prevent the development of stress-related problems by directly altering the work-related contingencies of stress so as to help individuals control the frequency and intensity of stressors within the work environment (Flaxman & Bond, 2010b; Murphy & Sauter, 2003). Examples of this include job redesigns, increasing an employee's authority in decision-making, and time management training (Flaxman & Bond, 2010b; Jackson, 1983; Richardson & Rothstein, 2008). Secondary interventions are used as an attempt to reduce the severity of an employee's stress reactions before they lead to serious health problems (Murphy & Sauter, 2003). This is a preventative type of intervention, with the goal of effectively managing an individual's stress before it becomes chronic. Lastly, tertiary interventions are those in which employees receive treatment for health-related conditions caused or exacerbated by stress (Arthur, 2000). This level of intervention is designed for individuals already experiencing chronic or debilitating levels of distress (Flaxman & Bond 2010b). Examples might include treatments for sleep problems, alcohol or drug abuse, and other types of pathologies.

Within the literature, secondary interventions are the most commonly used form of SMI (Giga, Cooper, & Faragher, 2003). The underlying goal of secondary interventions is to provide the employee with techniques or instructions on how to more effectively cope with stress. Secondary interventions include cognitive-behavioral skills training, meditation, relaxation, journaling, and time management training. Cognitive-behavioral skills training consists of both information provision and skills training. In these interventions employees are taught to recognize various work-related thoughts and emotions and to understand the role these thoughts and emotions play in their reactions to work-related situations and how

these situations can impact life in general. In addition, participants are taught specific skills designed to either modify or manage those thoughts and emotions; the goal is to help employees develop a more adaptive coping strategy (Bond & Bunce, 2000). Meditation and relaxation training focuses on helping the employee effectively cope with stress by giving them alternative behaviors to engage in when stressful situations occur. Examples of this are deep breathing exercises and muscular relaxation training (Flaxman & Bond, 2010b). Journaling involves writing down notes about stressful work situations (van der Klink, Blonk, Schene, & van Dijk, 2001). The goal is to help the employee recognize situations that are stressful and how the employee responds to stressors—so alternatives might be identified. Time management training helps employees better manage their time both at work and at home. This can be done through goal setting, prioritizing tasks, and proper use of scheduling (Richardson & Rothstein, 2008). In sum, all of these interventions are designed to either change the way an individual thinks about or emotionally responds to a perceived stressor.

Richardson and Rothstein (2008) conducted a meta-analysis of different types of stress management interventions in various workplace settings. For their study, inclusion criteria were that the study was an experimental evaluation of a SMI, with participants being individuals from within a workplace setting. Additional criteria included that the study used random assignment, reported statistics for all groups, and be written in English after 1976. A total of 38 articles met the criteria and were included in their analysis. Interventions were categorized as cognitive behavioral skills training (defined above), relaxation-based interventions (defined above), and alternative interventions, defined as interventions that could not be classified within another category (e.g., feedback, journaling, classroom management). Richardson and Rothstein examined intervention effects on the psychological

outcome variables (stress, anxiety, mental health) and work-related outcome variables (e.g., job satisfaction, role ambiguity, perceived control). Cognitive-behavioral skills training, used in 7 studies, was found to have the largest overall effect size ( $d=1.164$ ) when compared to other types of interventions, including multimodal interventions (7 studies,  $d=.909$ ), relaxation interventions (17 studies,  $d=.497$ ), and organizational interventions (5 studies,  $d=.114$ ). When broken down by different outcome variables, cognitive-behavioral skills training was found to have the largest effect size on psychological outcome variables (e.g. stress, anxiety, mental health) ( $d=1.154$ ), followed by alternative interventions ( $d=.905$ ), and relaxation interventions ( $d=.507$ ). With work-related variables, only 1 study was conducted using cognitive-behavior skills training. Richardson and Rothstein concluded that cognitive-behavioral skills training may have had the largest effect, when compared to other types of interventions, due to the fact that cognitive-behavioral skills training directly addresses negative thoughts and cognitions and teaches specific and proactive responses to stress. Given that cognitive behavioral skills training was found to be most effective, it is surprising that it was used in only 38% of studies. This could be due to the relatively recent trend of more clinicians treating stress-related disorders, along with the application of clinical-based interventions to more broad scales, such as that of the organization (Gardner, Rose, Mason, Tyler, & Cushway, 2005).

Although the findings of this meta-analysis suggest that cognitive-behavioral skills training could be beneficial to address work-place stress it is important to note that the results come with limitations. First, most studies examined effects solely on participant perceptions of psychological variables (e.g., stress, anxiety, mental health), as opposed to directly measuring work-related behaviors or objective measures of outcomes. Second, across studies

evaluating effects of the intervention on psychological dependent variables, self-report was the sole measurement technique used. Lastly, cognitive-behavioral skills training actually decreased in effect size when combined with other components, from a  $d$  of 1.230 when used as the sole intervention, to a  $d$  of .233 when combined with four or more components. This can be argued as either a selling point or limitation, depending on the interpretation. As a selling point, cognitive-behavioral interventions have the ability to be an effective form of intervention without any outside resources or components; as a limitation, cognitive-behavioral interventions may lack flexibility in both the presentation of the material and its ability to work in combination with other resources.

Cognitive behavioral skills training developed out of cognitive behavior therapy, an umbrella term for psychological interventions targeting both overt behavior and cognitive behavior of individuals in psychological distress. In behavior therapy, cognitive behavior therapy is sometimes referred to as the “second wave.” The first wave consisted of interventions primarily targeting overt behavior (Brown, Gaudiano, & Miller, 2011; Hayes, 2004). This type of intervention was used to observe, predict, and modify behavior to improve an individual’s mental health (Skinner, 1953). These interventions typically were conceptually and theoretically parsimonious, appealing to environmental variables as causal mechanisms, and linked directly to basic and applied science. These interventions were criticized though for neglecting cognitive and physiological behavior (Hayes, 2004). The “second wave” developed as a response and consisted of interventions targeting overt and covert behavior, such as cognitive therapy (Beck, 1976) and rational emotive behavior therapy (Ellis, 1957). These interventions often invoked hypothetical constructs (e.g., schemas) in causal or mediational roles and often lacked a parsimonious link to theory of

basic or applied science (Hayes, 2004). In fact, recent research suggests that the active ingredient in these approaches is the overt behavior change (Longmore & Worrell, 2007).

The “third wave” of behavior therapies are built upon the first two waves of therapies and includes interventions that (a) address overt and covert behavior, (b) are conceptually and theoretically parsimonious, and (c) are supported by basic and applied behavioral science. Examples include but are not limited to Dialectical Behavior Therapy (DBT; Linehan, 1993) and Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). These “third wave” therapies include various types of interventions that all share a strong emphasis on mindfulness and mindfulness-related skills to improve life functioning (Baer, 2006; Hayes et al., 1999). Of the third-wave therapies, ACT seems most directly relevant to workplace stress.

### **Acceptance and Commitment Therapy**

Acceptance and Commitment Therapy (ACT) is a behavior-analytic therapeutic approach. The premise of ACT is that much of the psychological distress that humans face is due to an effort to control private experiences such as emotions, thoughts, and memories (Hayes et al., 1999). Thus, ACT is radically different than many other approaches, which focus on exerting more control over private experiences. Examples include thought stopping (Bakker, 2009), relaxation or guided breathing strategies to be used when confronted with a stressful situation (Hubbard & Falco, 2015), or cognitive restructuring (Dobson & Hamilton, 2009). Acceptance and Commitment therapy is based upon decades of basic research on the functions of human language and the ways in which private behavior (thoughts, feelings) interact with overt behavior and environmental variables (relational frame theory; Hayes, Barnes-Holmes, & Roche, 2001). A comprehensive analysis of relational frame theory is

beyond the scope of this review (see Hayes, Barnes-Holmes et al., 2001), however a brief overview follows.

### **Relational Frame Theory: A Synopsis**

Relational frame theory is a behavior-analytic account of human language and cognition. In relational frame theory, language and cognition are viewed as behavior, and not as products of some underlying mechanism (Hayes, Fox et al., 2001). Thus, thinking, “I am tired” is no different from an overt behavior such as raising one’s hand. Human’s capacity for language seems to hinge on our ability to derive relations amongst stimuli. Many relationships are directly taught (e.g., I might tell you that Bill is Cynthia’s father) but others are inferred from what has already been learned. For example, if I tell you that Phil is Cynthia’s brother and Bill is her father you have two simple pieces of information but you probably have derived four additional relationships including (a) that Cynthia is Phil’s sister, (b) Cynthia is Bill’s daughter, (c) Phil is—most likely—Bill’ son and, (d) most likely, Bill is Phil’s father. This is, in a nutshell, a relational frame. A relational frame is a derived relationship between two arbitrary or symbolic stimuli—the stimuli are arbitrary (symbolic) in that they do not have any inherent or obvious relationship to one another (e.g., there is no inherent relationship between the word “banana” and the curved fruit the name describes, the only reason that thing is a banana is that is the name that has been chosen for it). There are many types of relational frames that humans can form between stimuli including equal (“banana” equals that curved fruit), same, different, faster, slower, closer, further, etc. For example, if I tell you that I am taller than Cynthia and that Jimmy is taller than me, you will realize without much thought that Jimmy is taller than Cynthia and that Cynthia is shorter than Jimmy.

As noted earlier, relational frame theory has been studied extensively with over 70 randomized control trials having been conducted (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). To date, more than 250 articles and books are included in the empirical RFT section of publications listed on the Association for Contextual Behavioral Sciences (ACBS) website. Research has demonstrated the occurrence of relational responding in various populations, from children to adults (Berens & Hayes, 2007; Stewart, Barnes-Holmes, Roche, & Smeets, 2001). Research has indicated that the ability to derive stimulus relations may, in fact, be limited to verbally capable humans. Devany, Hayes, and Nelson (1986) found that verbally capable children, both typically developing and children with IDD were able to develop derived relations, whereas the children with IDD who were verbally deficient were not. Along with this, studies have shown a correlation between cognitive and verbal skills and the ability to derive relations (Devany et al, 1986). Research on RFT has also shown preliminary evidence indicating that derived relations produce priming effects, while also providing a model of semantic relations and semantic processing (Barnes-Holmes et al., 2005).

Relational frame theory is relevant to more than human use of language, research has shown that humans derive relations between emotions and thoughts and experiences (Hayes, 2004; Moore, 2009). For example, if a person describes or simply remembers a traumatic event from his past, this can evoke distress. Further, people can become distressed from simply imagining an event, without ever having experienced it directly. The bidirectionality of language is the culprit here. Imagine that Lou was in a bad car accident. For Lou, words such as “car,” or “accident,” actual cars, any smells (e.g., gasoline), sounds, etc., and the memory of the accident and then ensuing trauma are all in a relational frame such that any

one might evoke the others. For example, describing the accident, smelling gasoline, or simply sitting in a car could evoke memory of the accident such that Lou becomes distressed only by imagining the accident.

Wilson, Hayes, Gregg, and Zettle (2001) describes the downside of relational frames and language as:

The paradox where the species that has by far the fewest contacts with direct sources of pain...through language is able to suffer with a degree of intensity, constancy, and pervasiveness that is literally unimaginable in the nonhuman world. Because of bidirectionality we can ...imagine ideals and find the present to be unacceptable by comparison; we can reconstruct the past; we can worry about imagined futures; we can suffer with the knowledge we will die. (p. 215)

### **Psychological Flexibility**

Acceptance and Commitment Therapy is used as a psychological intervention to undermine the destructive process that language can have on an individual's life. The goal of ACT is to increase psychological flexibility. Psychological flexibility refers to the ability to behave in ways that move you closer to the life you value and your goals by, in part, being present to thoughts and feelings we experience as difficult. This is done through acceptance and mindfulness exercises, which focus on increasing effective involvement with the here and now, occurring in combination with commitment and behavior change strategies.

Psychological flexibility is the underlying mechanism through which ACT works and has been described as contacting the present moment as a conscious human being, and, based on what the situation affords, acting in accordance with one's chosen values (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004). Whereas the goal of these interventions is, in part, to

change how an individual responds (including what a person thinks or feels) to events perceived as stressful by changing certain thoughts or feelings, the goal of ACT is to (a) accept that uncomfortable or unwanted thoughts and feelings happen and (b) cease fruitless attempts to avoid those thoughts and feelings, and (c) learn strategies to more fully engage in the types of actions and behaviors the individual values.

Psychological flexibility can be described through the six core processes involved in its establishment. These include: cognitive defusion, acceptance, contact with the present moment, self-as-context, values, and committed action. Below is an overview of these processes. For more information, including a review of the research on ACT, see Hayes et al. (1999).

### **Cognitive Defusion and Acceptance**

Cognitive fusion encompasses the idea that verbal stimuli serve as a dominating force in the regulation of one's behavior. This occurs when a person behaves as if their thoughts are, in fact, reality. Humans become "fused" to certain rules, judgments, or reasons, as well as to our views of the past, the future, or ourselves (Harris, 2009). One important goal of ACT is to help a person "defuse" from thoughts and feelings and experience their thoughts merely for what they are.

Acceptance has been defined as contacting the automatic stimulus functions of psychological events, without acting to alter (change, minimize, avoid) those functions (Hayes et al., 1999). In less technical terms, acceptance can be described as simply experiencing thoughts and feelings as they are, whether or not they are pleasant or painful, without trying to minimize them or avoid them. Rather, it is when people hold unhelpful content in a specific context it can have harmful emotional, physiological, behavioral and

cognitive effects (Bond, Hayes, & Barnes-Holmes, 2006). Through acceptance and defusion, ACT shows the individual how to notice these thoughts and feelings without trying to avoid them, undermining the domination language has on the individual's life.

### **Contact with the Present Moment and Self-as-Context**

Contact with the present moment takes into account the fact that cognitive fusion can lead to more than just avoidance. An example of this can be seen through the numerous times where individuals become caught up in their thoughts. When this happens, individuals lose the ability to be present of both their inner psychological world and their external contingencies. ACT helps the individual gain conscious awareness of both these areas, through the process of self-as-context. Along with being present in the moment, self-as-context helps contact and create a positive sense of self. This is done by helping the individual contact, take in, and evaluate their current circumstance, enabling them to act more effectively when situations or events occur.

### **Values and Committed Action**

In ACT, much of the overtly measured efficacy comes in the form of values and committed action. Values are the chosen qualities of action patterns that people can work toward, but they cannot arrive at once and for all (Hayes et al., 2004). Values can be looked at as the statements about what an individual wants to be doing with their life, and as such, can be used as motivation. When individuals live a life according to their values, they are able to more effectively defuse from unhelpful content, accept their thoughts and emotions, and contact the present moment as a conscious human being. Once an individual is able to clarify the values of their life, then they are able to create larger and larger patterns of behavior change. This process is known as committed action. By furthering an individual's

values and committed action, the process can then extend to broader, long-term goals, benefiting the individuals across various domains of life.

### **Acceptance and Action Questionnaire-II**

The Acceptance and Action Questionnaire-II (AAQ-II) is the central measure used in ACT-related research. It was created to measure the construct of acceptance or psychological flexibility, both of which are terms that can be used interchangeably. The original scale was created consisting of both a nine-item (AAQ-9) and sixteen-item (AAQ-16) version (Hayes et al., 2006). The AAQ has since been revised into the AAQ-II, creating a more reliable measure of psychological flexibility. The AAQ-II started out as a ten-item scale, but has since been changed to a seven-item scale, thus creating greater psychometric consistency than the previous iterations (Bond et al., 2011). Data analysis of the AAQ-II has shown that it correlates highly with the original AAQ ( $r=.97$ ), thus providing evidence that both versions are measuring the same construct. Research has shown that the mean coefficient alpha for the AAQ-II is .84, with a range of .78 to .88. In regards to test-retest reliability, values of .81 and .79 have been found at 3 and 12-months, respectively.

### **Interventions Addressing Psychological Flexibility**

To date, twelve studies have been published investigating the utility of ACT interventions in the workplace (Bethay, Wilson, Schnetzer, Nassar, & Bordieri, 2013; Bond & Bunce, 2000; Biglan, Layton, Jones, Hankins, & Rusby, 2013; Brinkborg, Michanek, Hesser, & Berglund, 2011; Flaxman & Bond, 2010a; 2010b; Hayes et al., 2004; Kishita & Shimida, 2011; Lloyd, Bond, & Flaxman, 2013; McConachie, McKenzie, Morris & Walley, 2014; Noone & Hastings, 2010; Stafford-Brown & Pakenham, 2012). Taken together, these studies have shown a fundamental relation between psychological flexibility and numerous

workplace behaviors (Lloyd et al., 2013). High levels of psychological flexibility have been shown to correlate with a reduction in worker stress (Bond & Bunce, 2000; Flaxman & Bond, 2010a; 2010b; Noone & Hastings, 2010), improved job performance (Bond & Bunce, 2000; Bond & Flaxman, 2006; Hayes et al., 2004), reduced burnout (Lloyd et al., 2013, Hayes et al., 2004; Brinkborg et al., 2011) and greater levels of mental health (Bond & Bunce, 2003; Bond & Flaxman, 2006; Stafford-Brown & Pakenham, 2012).

### **Work-Related Stress for Direct-Care Staff: ACT as a Viable Alternative**

ACT may be a more effective approach to dealing with the workplace stress experienced by DCS than CBT due to an ACT perspective (a) offering more effective strategies for DCS in dealing with their cognitions and (b) greater understanding of the underlying mediators or mechanisms involved.

Using an approach such as CBT may not be the most suitable choice for DCS since much of the focus of CBT is based around reducing the emotional impact and content of unpleasant cognitions (Yovel, Mor, & Shakarov, 2014). Traditionally, forms of CBT are directed towards attempts to change the content, frequency, or the intensity of an individual's thoughts and emotions (McConachie et al., 2014). Thus, individuals are taught strategies that may be used to alter, suppress, restructure, or avoid thoughts, feelings, and sensations. As some researchers and practitioners have pointed out, the logic underlying this implies that those cognitions and feelings are maladaptive and might actually make it more likely that a person views those events and perhaps themselves as "bad" or that their thoughts and feelings are uncommon. Another issue is that this kind of thinking requires more cognitive effort than do other approaches. When the individual is left trying to control these internal events or experiences, they are then left with fewer cognitive resources to be present and

attend to the current environment. Along with this, much difficulty is involved in reducing the impact of these emotions since many of the situations employees encounter are unable to be changed, challenged, or correctly worked through with problem solving (McConachie et al., 2014). Lastly, psychological inflexibility may lead to decreased ability in achieving one's goals (Lloyd et al., 2013) and moving towards a values-driven work life. Therefore, an alternative approach to reducing work stress may serve as a better fit for addressing the challenges and needs of DCS.

Looking at employee stress from an ACT perspective differs from CBT in that ACT does not attempt to change the content, frequency, or intensity of one's cognitions. Instead, ACT helps people learn to simply accept uncomfortable thoughts and emotions for what they are, with the goal of changing the relationship the individual has with these cognitions. By increasing the psychological flexibility of a DCS, the individual may be able to more effectively be present or attend to the current environment, since fewer resources are focused on controlling internal experiences. Along with this, DCS will be able to more effectively handle their thoughts and emotions, as well as situations, since they will be coming from the perspective of acceptance and not one of suppression. Finally, DCS may also be able to work in a manner that is more consistent with their goals and values as another component of ACT focuses on identifying values and goals and then helping an individual engage in behaviors that are more congruent with those values and goals (Bond et al., 2006). Research has shown that an acceptance-based approach increases improvements in life functioning that are independent of changes in the content, frequency, or intensity of an individual's thoughts and feelings (Hayes et al., 2006). Increasing psychological flexibility allows for employees to have greater levels of mental health (Bond & Bunce, 2003; Bond & Flaxman, 2006), which

in turn, allows for them to do their job more effectively. This can be attributed to the fact that individuals are better able to live a more values-directed and values-consistent life, opening up a greater possibility to experience the effects of positive reinforcement.

Another issue is the lack of knowledge when discussing the mediators or mechanisms of change through which many of these SMIs work (Bunce, 1997, Devereux et al., 2009). Even though Cognitive Behavioral Skills training has been shown to have the largest effect size (Richardson & Rothstein, 2008; van der Klink et al., 2001), interventions vary in the techniques and types of components drawn upon (e.g., problem solving, cognitive restructuring, thought suppression). Because of this, researchers have argued that it is difficult to create or develop the most effective type of intervention, which could be due to the lack of theoretical understanding as to how and why these interventions work (Gardner et al., 2005). Therefore, incorporating alternative perspectives and mechanisms for assessment may be a more suitable approach.

Alternatively, it has been hypothesized that psychological flexibility acts as a mediator for mental health and job performance (Bond & Bunce, 2000; Hayes et al., 1999; Lloyd et al., 2013). Unlike other types of SMIs, an ACT-based approach has a much greater potential to be controlled, manipulated, and improved upon, through the mechanism of psychological flexibility. From a behavior analytic perspective, this is a vital and necessary component. Psychological flexibility has the ability to be measured and improved upon, which is done through increasing acceptance and defusion, mindful contact with the present moment, and values-directed action (Bond et al., 2006). Because of this, there is a growing body of evidence using psychological flexibility as the targeted variable within interventions

involving stress management and DCS (Bethay et al., 2013; Biglan et al., 2013; McConachie et al., 2014).

### **Preliminary Research on the Efficacy of ACT for Direct Care Staff**

Two studies to date have been conducted looking at the application of an acceptance-based intervention on DCS (Bethay et al., 2013; McConachie et al., 2014). Bethay et al. (2013) worked with 38 staff employed in a large residential facility for individuals with intellectual disability that provides 24-hour care. The participants worked in a variety of departments and disciplines and included psychologists, special education teachers, direct care staff, and nurses. Participants were randomly assigned to either experimental or control conditions. Both groups received nine hours of training; participants in the experimental condition received six hours of ACT training and three hours of training in principles and procedures of applied behavior analysis whereas control group participants received nine hours of training in principles and procedures of applied behavior analysis. The dependent variables in this study included two outcome measures, the General Health Questionnaire-12 (GHQ-12; Goldberg, 1978) and the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996), and a measure of cognitive defusion described as the Burnout Believability Scale (Bethay et al., 2013).

No significant differences were found between groups overall. However, when the authors examined results only for participants who reported practicing what they had learned, practicers (n=28) fared better than those who had not practiced (n=6) across groups. The authors then examined outcomes for participants who reported practicing with higher levels of stress (i.e. GHQ-12 scores > 11) at baseline. Of these 28 participants, those in the ACT +ABA (n=14) group exhibited significantly greater decreases ( $r=.67, p=.012$ ), in distress at

posttest, and these differences were maintained at follow-up. Although promising, the generality of these findings to DCS are limited due to overall small sample size. In addition, because results were not reported specifically for DCS it is not clear whether they specifically benefitted from the intervention.

McConachie et al. (2014) looked at the effectiveness of an acceptance and mindfulness-based stress management workshop and the impact of this workshop on psychological distress and psychological well-being. Participants included 120 DCS that worked with individuals with IDD who exhibited challenging behavior. A quasi-experimental pre-post design was used to assess effects of intervention on both outcome and process measures. Outcome measures included psychological distress, measured by the GHQ-12 (Goldberg, 1978), psychological well-being, measured by the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007) and staff's perception of work stressors, measured by the Staff Stressor Questionnaire (SSQ; Hatton et al., 1999). Process measures included psychological flexibility, measured by the Acceptance and Action Questionnaire-II (AAQ-II, Bond et al., 2011), and thought suppression, measured by the White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994). Participants completed measures at baseline and again six and twelve weeks after the intervention. Results from this study showed a significant reduction ( $p=.001$ ) in psychological distress pre to post-intervention for the intervention group when compared to the control. Additionally, an exploratory analysis was conducted controlling for individuals with clinically significant baseline scores ( $>11$ ) of psychological distress. Results from this analysis found a greater reduction in psychological distress for participants in the intervention group who also reported high baseline levels of psychological distress. This study was limited by the lack of

random assignment, a high attrition rate (27.5%), and a lack of sensitivity in regards to some outcome measures.

Taken together, results of these studies suggest there may be a floor/ceiling effect when applying an ACT-based intervention to DCS. Within these studies, a large portion of the participants reported low levels of psychological distress at baseline. Additionally, many individuals also reported high levels of psychological flexibility. Thus, it is possible that many participants did not “need” the intervention and thus did not benefit since no improvements were needed.

Another potential confound in these studies was that researchers did not control for the population with whom the DCS worked. Bethay et al. (2013) reported that participants in the study were employees of the facility that worked across various disciplines. This creates a confound in that each job has a particular set of demands, with varying roles and stressors in regards to supporting individuals with IDD. Additionally, stressors within a particular job can vary based on differing client characteristics. There was no control in the study for individual differences in the workplace setting and level of functioning, as staff were grouped in the broad category of working with individuals who (a) exhibited challenging behavior, (b) had severe adaptive deficits, (c) had serious medical conditions, or some combination of the former.

In the field of developmental disabilities, there is a wide range in the levels of skills and functioning among individuals. Because of this, there are different challenges and difficulties experienced by staff based on the characteristics of the population being served. Therefore, it is only natural that some level of variability exists in the stressors staff face within the workplace. Jenkins, Rose, and Lovell (1997) found that DCS working in

residential settings that supported individuals with challenging behaviors rated themselves as significantly more anxious than DCS who did not support individuals with challenging behaviors. They also found that staff working in homes with individuals who exhibited challenging behaviors felt less supported and reported lower levels of job satisfaction when compared to staff working in homes where challenging behaviors did not exist. This data points to the idea that a more specifically tailored approach may be a better way of understanding and fixing some of the problems left unanswered in the research to date.

In sum, it is possible that ACT-based interventions for DCS would be more effective if they targeted individuals who (a) reported more psychological distress at baseline, (b) reported lower levels of psychological flexibility at baseline, and/or (c) worked with individuals who engaged in challenging behavior.

### **Statement of Problem**

Workshops require a substantial amount of buy-in from an organization, as both time and financial resources are being expended in hopes of increasing the efficacy and wellbeing of staff. The primary objective of this study was to gain a more thorough understanding of psychological flexibility and how it relates to other variables (e.g., general mental health and job satisfaction) among staff working in the direct care role. Additionally, this study also looked to evaluate in greater detail, the potential utility of a stress management intervention or workshop for DCS based in the principles and processes used within Acceptance and Commitment Therapy. Only two studies to date have examined the utility of acceptance-based interventions for DCS and results are equivocal. This study looked to further the knowledge of the research to date on the efficacy of an ACT-based intervention applied to human service settings, and DCS in particular. Along with this, results from this research

were used to specifically answer the question of whether or not an acceptance-based intervention would be more effective applied across an organization or for only those staff deemed to be at risk.

Therefore, the main questions of interest were:

- 1.) *Is there a relation between psychological flexibility and psychological distress in DCS?*
- 2.) *Is there a relation between psychological flexibility and job satisfaction in DCS?*
- 3.) *To what extent do DCS's scores of psychological flexibility and a work-related measure of psychological flexibility vary depending on (a) the length of employment at an organization, (b) the amount of total years working in the field, (c) age, and (d) the number of hours worked per week?*
- 4.) *Is there a need for a modified measure of psychological flexibility specifically for DCS?*
- 5.) *What percentage of staff working in the direct care role serving individuals with disabilities are deemed to be "at risk"? Would an ACT-based intervention be more effective and a better use of an organization's resources applied to this subset of individuals deemed to be "at risk"?*

## **Method**

### **Participants**

The population of interest for this study were direct care workers for individuals with IDD, known as Direct Care Staff (DCS). The sample of DCS used in this study worked in a variety of programs and settings, including but not limited to residential, day treatment or habilitation, and respite or personal care services. To determine an adequate sample size for the study, a power analysis was conducted. The power analysis was conducted with the input parameters of two tails, a .3 (medium) effect size, significance level of  $p < .05$ , the use of 4 predictors, and a power of .90. With these parameters, a sample size of at least 82 individuals was need. For this study, a sample of roughly 100 individuals was obtained in order to make

sure the sample size was sufficient, as well as large enough to conduct additional exploratory analyses.

Participants were recruited from two organizations that employ DCS who work with individuals with disabilities in residential and day-treatment settings. Each organization is (a) a Department of Health and Human Services-recognized facility providing residential or day treatment services for adults with IDD, (b) serves children or adults with various levels and types of disabilities, (c) serves individuals with and without challenging or self-injurious behavior, and (d) is willing to allow DCS to take part in the study. The participating organizations included the J. Iverson Riddle Developmental Center located in North Carolina and Rise Services, Inc. located in Oregon and Utah.

For individual participants, inclusion criteria necessitated that the participant (1) be over 18 years of age, (2) be fluent in written and spoken English, and (3) be able to provide informed consent. Ninety-nine DCS responded to the questionnaire. Out of these responses, two individuals (2%) indicated on their consent form that they did not wish to continue. Two individuals (2%) did not respond to any questions other than agreeing to informed consent, and one individual (1%) did not respond to any questions other than the demographic questions. These five individuals were dropped from the statistical analyses. As a result, 94 respondents were included in the statistical analyses.

Demographic information was collected from participants and is displayed in Table 1. Of the 94 respondents, 5 did not provide demographic information. Therefore, data in the table report the percentage of individuals who responded to the demographic questions (n=89).

Participants ages varied greatly, from 18 to mid-60's. However, the majority of the respondents (72%) were between 18 and 40 years of age. The majority of respondents were female (78%), which was to be expected as this line of work is dominated by women. Additionally, 72% of respondents had more than a high school education, with at least some college credit. Eighty-four percent of the respondents had over a year of experience working in the field, with almost 40% of respondents having eight or more years of experience. Three-quarters (75%) of the respondents had been working at their organization for at least one year, with 40% having worked at their organization for 1 to 3 years. Well over half of the respondents (64%) were considered full-time employees at their respective organizations, and only 14% worked less than 30 hours per week.

This project was conducted in adherence with the American Psychological Association's ethical principles of psychologists and code of conduct. The study was approved by Appalachian State University's Internal Review Board on October 15, 2015. The IRB approval page is located within the appendices.

### **Design**

Participants completed either an online questionnaire using Qualtrics (Qualtrics, 2010), or a paper-administered form. Administrators at participating organizations decided whether they would prefer to give the questionnaire to DCS using the online form, the paper-based form, or leave the option up to the staff. For individuals and organizations that decided to use the online format, a link was sent to employees by the director or supervisor, prompting them to fill out the questionnaire anonymously. After the questionnaire was completed, participants then clicked on a separate link sending them to a page where they were asked to fill out demographic information, including their names, so that staff will be

able to receive credit for participation. A note was included on the page explaining that demographic information is not connected to the questionnaire and will be used for only background characteristics and inclusion in the prize drawing.

For individuals and organizations that decided to use the paper form, staff were asked to fill out the questionnaire either at their place of employment or at their homes, depending on the preference designated by the organization. Completed forms were returned to supervisors using secured envelopes that were included with the questionnaire. The paper forms included an additional sheet with demographic information to be filled out by the staff. Forms were securely sealed in a second envelope stapled to the first envelope. In order to protect confidentiality, supervisors placed the envelope of the questionnaire and the demographic information in two separate piles. Data from the paper forms were entered into the online questionnaire using Qualtrics. Once this data was uploaded, questionnaires were then stored in a locked shelf in order to maintain confidentiality. A list of the individuals who returned completed forms was given to supervisors in order for staff to receive credit. Additionally, the researcher kept a list of the names of participants and their organization so that staff could be included in the prize drawing.

The survey remained open for three months in order to receive the highest amount of completed questionnaires. The length of time the questionnaire stayed open was based on the schedule created in advance for having the data collected at a point early enough to complete the project.

Both employers and staff had the opportunity to receive the results obtained from the study. All information, including the results, given to employers will be anonymous. Scores

will be given to employers and staff with the overall averages collected, averages of their staff, and differences between the two scores.

This questionnaire consisted of four different measures related to workplace stress and job satisfaction. Counterbalancing the order of the measures was conducted for both the online and paper-based format of the questionnaire.

### **Measures**

All measures are located in Appendices A-E. The four measures used in this study are described below.

**Job Satisfaction Survey.** The Job Satisfaction Survey (JSS; Spector, 1994) consisted of 36 items measuring the degree of satisfaction or dissatisfaction in nine areas of work (four questions each). The areas included pay, promotion, supervision, contingent rewards, fringe benefits, operating procedures, co-workers, nature of work, and communication. Responses were rated from 1 (strongly disagree) to 6 (strongly agree). For this study, Cronbach's  $\alpha = .91$ . This measure was used to address whether or not a relation existed between psychological flexibility and job satisfaction and whether or not there is a utility for a modified version of psychological flexibility specifically for DCS.

**The Acceptance and Action Questionnaire-II.** The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011) was used to measure the extent to which staff are able to experience upsetting or difficult thoughts, feelings, and emotions without trying to suppress or avoid them. It is a revised version of the original AAQ-I, and has been shown to be a reliable, valid measure of psychological flexibility, acceptance, and experiential avoidance. The AAQ-II started out initially as a ten-item questionnaire, and was later shortened to a seven-item questionnaire after additional analyses were conducted. It was

lessened to the seven items due to the single factor loading of those seven questions, with the single factor being described as psychological flexibility. The AAQ-II correlates .97 with the original AAQ (Bond et al., 2011). The AAQ-II contained 7 items with a 7-point scale, with higher scores indicating a greater amount of experiential avoidance/psychological inflexibility. Scores can range from 7 to 49, and are calculated as a sum of the item responses. Previous research has reported a mean Cronbach's  $\alpha$  of .84 and mean test-retest reliabilities of .81 and .79 at 3 and 12 months, respectively (Bond et al., 2011). This measure was used to address variations in staff's scores of psychological flexibility, the relation between psychological flexibility and psychological distress, the relation between psychological flexibility and job satisfaction, the utility for a modified version particular to DCS, and percentage of individuals working the position who may be deemed "at risk." The coefficient alpha found in this study was Cronbach's  $\alpha = .96$ .

**Direct Care Staff-Acceptance and Action Questionnaire.** Because the AAQ-II contained items not specifically relevant to DCS, we developed a modified version of the AAQ-II specifically for this population (DCS-AAQ). The number of items and scaling is identical to the original version, with differences occurring in the language that are particular to the work and responsibilities experienced by those working in the DCS role. Staff participating in the study were asked to fill out both the AAQ-II and the DCS-AAQ. This measure was used to address variations in staff's scores of psychological flexibility, the relation between psychological flexibility and psychological distress, the relation between psychological flexibility and job satisfaction, the need for a modified version particular to DCS, and percentage of individuals working the position who may be deemed "at risk." The coefficient alpha for the DCS-AAQ was Cronbach's  $\alpha = .89$ .

**General health questionnaire-12.** The General Health Questionnaire (GHQ-12; Goldberg, 1978) is a 12-item scale used as a screening tool to measure psychological distress within the general population. It is a condensed version of the GHQ-60. Each item is scored on a 4-point scale ranging from 0 (not at all) to 3 (more than usual). Higher scores indicated higher levels of psychological distress and in particular for the 12-item version, scores predict the presence of a psychological disorder with 93.5% sensitivity and 78.5% specificity. There are four different ways scores on the GHQ-12 can be totaled. The authors advocate that scores be totaled using a binary method (0=0, 1=0, 2=1, 3=1). Internal consistency has shown alpha scores ranging from .79 to .92 (Mullarkey, Wall, Warr, Glegg, & Stride, 1999). For this study, Cronbach's  $\alpha = .90$ . This measure was used to address the relation between psychological flexibility and psychological distress, the need for a modified version particular to DCS, and percentage of individuals working the position who may be deemed "at risk."

### **Exploratory Analyses**

Furthermore, exploratory analyses were also conducted looking at additional relations between each of the variables and predictors. If the results show differences in scores on the AAQ-II and a sizeable percentage of individuals with elevated psychological distress, then the results may indicate that an ACT-based intervention may be better viewed as a secondary type of intervention (Richardson & Rothstein, 2008), delivered to specific staff with factors putting them at risk.

### **Results**

Ninety-nine individuals completed some or all of the survey. Forty-nine individuals completed the survey online and 50 individuals completed the survey using the pen and paper

option. Forty-six individuals were from Rise Services, Inc. and worked in residential settings in Oregon and Utah, 51 were from the J. Iverson Riddle Developmental Center in North Carolina, and two did not specify their organization of employment.

### **Statistical Analysis and Data Management**

Statistical analyses were performed using the SPSS 23 premium grad pack. For the online-based questionnaires, results within the Qualtrics database were downloaded into SPSS 23. For the paper-based questionnaires, data were entered and uploaded into the Qualtrics database by the primary investigator, then downloaded into SPSS 23. These files were then merged together to create the completed dataset. The majority of the data analyses were conducted within SPSS 23, with only the CFA conducted outside of it, which was conducted in Mplus.

Data cleaning was conducted to check for entry and clerical errors. This included addressing missing values, checking for improper entries, checking for entries outside of the possible range, and checking for outliers within the dataset. Additional data management included how to address missing data within each of the four measures used in the study. For the AAQ-II, DCS-AAQ, and the GHQ-12, cases with missing values were automatically removed from the data analysis. For the JSS, the original creator and author suggests that missing values be filled with the mean score for each question left unanswered, in order to still be able to obtain an overall score, as well as factor score, of job satisfaction (Spector, 1994). This process was used to fill in missing data for 5 of the 99 respondents.

**Research Question 1. Is there a relation between psychological flexibility and psychological distress in DCS?**

To test this question, two bivariate correlation analyses were conducted to determine whether a relation exists between measures of psychological flexibility (AAQ-II and DCS-AAQ) and a measure of psychological distress (GHQ-12). The binary method of scoring, which was the scoring method advocated by the original author, was used to score the GHQ-12. The sum of all seven questions was used to score both the original AAQ-II and the DCS-AAQ. A bootstrapping procedure was conducted to increase the robustness of the confidence interval. Pearson's correlation coefficient was used to determine if a relation exists between these two variables, along with the direction in which the relation occurs.

First, we examined the relation between scores on the GHQ-12 and the AAQ-II (see Figure 1). Results from the bivariate correlation analysis indicated a significant positive linear relation,  $r(91) = .78$ , 95% Bca CI [.64, .87],  $p < .001$ , between psychological distress ( $M = 2.43$ ,  $SD = 3.22$ , 95% Bca CI [1.77, 3.13]) and psychological flexibility ( $M = 15.01$ ,  $SD = 10.29$ , 95% Bca CI [12.99, 17.18]).

Next, we examined the relation between scores on the GHQ-12 and the DCS-AAQ (see Figure 2). Results from the bivariate correlation analysis indicated a significant positive linear relation,  $r(91) = .67$ , 95% Bca CI [.43, .79],  $p < .001$ , between psychological distress ( $M = 2.43$ ,  $SD = 3.22$ , 95% Bca CI [1.77, 3.13]) and the DCS-modified version of psychological flexibility ( $M = 13.77$ ,  $SD = 7.33$ , 95% Bca CI [12.25, 15.39]).

**Research Question 2. Is there a relation between psychological flexibility and job satisfaction in DCS?**

To test this question, two bivariate correlation analyses were conducted to determine whether a relation exists between measures of psychological flexibility (AAQ-II and DCS-AAQ) and a measure of job satisfaction (JSS). The JSS was scored by summing the 36

questions to create a total score for job satisfaction. For the AAQ-II and DCS-AAQ, the same process was used to sum the scores as in research question 1. A bootstrapping procedure was conducted to increase the robustness of the confidence interval. Pearson's correlation coefficient was used to determine if a relation existed between these two variables, along with the direction in which the relation occurred.

As seen in Figure 3, results from the bivariate correlation analysis indicated that a significant negative linear relation existed,  $r(94) = -.27$ , 95% Bca CI [-.48, -.01],  $p = .009$ , between job satisfaction ( $M = 131.61$ ,  $SD = 26.36$ , 95% Bca CI [126.45, 137.05]) and psychological flexibility ( $M = 15.26$ ,  $SD = 10.38$ , 95% Bca CI [13.22, 17.47]).

Results from the bivariate correlation analysis also indicated that a significant negative linear relation existed,  $r(93) = -.43$ , 95% Bca CI [-.56, -.24],  $p < .001$ , between job satisfaction ( $M = 131.58$ ,  $SD = 26.50$ , 95% Bca CI [126.28, 137.12]) and the modified version of psychological flexibility specifically designed for DCS ( $M = 13.80$ ,  $SD = 7.65$ , 95% Bca CI [12.40, 15.40]). This can be seen in Figure 4.

**Research Question 3. To what extent do DCS's scores of psychological flexibility and a work-related measure of psychological flexibility vary depending on (a) the length of employment at an organization, (b) the amount of years spent working in the field, (c) age, and (d) the number of hours worked per week?**

For this analysis, a multivariate analysis of variance (MANOVA) was conducted to look at how each of the four variables predicted scores on the AAQ-II and the modified DCS-AAQ. The main predictors were (1) the length of employment at one's particular organization, (2) the amount of years working in the field, (3) age, and (4) the number of hours worked per week. The main dependent variables were scores on the AAQ-II and the

modified DCS-AAQ. A MANOVA was chosen as the statistical procedure since all four of the predictor variables contained three or more groups, with groups being equally spaced and each group unable to be broken down any further (e.g., into only two groups). This was also the preferred type of statistical test as there were multiple categorical variables and multiple dependent variables related to each other. It should also be noted that the MANOVA was limited to two-way interactions as the highest type of interaction for each of the variables due to restrictions in group size based on the number of individuals who participated in the study.

Results from the MANOVA revealed a significant main effect for the variable number of hours worked per week,  $F(4, 112) = 2.52, p = .045$ , Wilk's  $\Lambda = 0.84$ , partial  $\eta^2 = .08$ . Follow-up tests of between-subject effects indicated that there was not a significant difference based on the number of hours worked per week for scores on the AAQ-II,  $F(2, 86) = .371, p = .691$ , partial  $\eta^2 = .01$ , as well as scores on the DCS-AAQ,  $F(2, 86) = 1.92, p = .156$ , partial  $\eta^2 = .06$ . Additional follow-up paired samples t-test were conducted in order to make sure the issue of power was not significantly effecting the results.

For respondents in group 1 (e.g., <30 hours worked per week), a paired samples t-test revealed that scores on the AAQ-II and the DCS-AAQ were statistically equivalent,  $t(12) = -.24, 95\% \text{ CI } [-4.27, 3.44], p = .816$ . For respondents in group 2 (e.g., 30-40 hours worked per week), a paired samples t-test revealed that scores on the AAQ-II and the DCS-AAQ were statistically equivalent,  $t(20) = -.99, 95\% \text{ CI } [-6.09, 2.19], p = .337$ . For respondents in group 3 (e.g., full time- 40 hours worked per week), a paired samples t-test revealed that scores on the AAQ-II and the DCS-AAQ were marginally different,  $t(55) = -1.90, 95\% \text{ CI } [-3.17, .08], p = .062$ .

This main effect was qualified by a significant two-way interaction for the variables age and number of hours worked per week,  $F(6, 112) = 2.76, p = .015$ , Wilk's  $\Lambda = 0.76$ , partial  $\eta^2 = .13$ . Follow-up tests of between-subject effects indicated that a significant difference exists for scores on the AAQ-II,  $F(3, 86) = 4.01, p = .012$ , partial  $\eta^2 = .17$ , and that a significant difference did not exist for scores on the DCS-AAQ,  $F(3, 86) = .73, p = .541$ , partial  $\eta^2 = .04$ . Therefore, additional pairwise comparisons were conducted for the AAQ-II. These comparisons revealed that for individuals aged 18-24, there was a significant mean difference in scores on the AAQ-II based on the number of hours worked per week. A significant difference ( $M_{diff} = 15.98, SE = 6.71, p = .027, 95\% CI [2.02, 29.93]$ ) existed between individuals working less than 30 hours per week ( $M = 24.78, SD = 17.98, 95\% CI [16.44, 33.12]$ ) and individuals working 30 to 40 hours per week ( $M = 8.80, SD = 2.49, 95\% CI [-2.39, 19.99]$ ), as well as a significant difference ( $M_{diff} = 11.88, SE = 5.53, p = .043, 95\% CI [.38, 23.37]$ ) between individuals working less than 30 hours per week and individuals working full-time ( $M = 12.90, SD = 6.90, 95\% CI [4.99, 20.81]$ ).

**Research Question 4. Is there a need for a modified version of the work-related measure of psychological flexibility specifically for DCS?**

There was preliminary support for use of the DCS-AAQ as an effective measure that can be used by those in the field when working with staff serving this population. This argument was based on the findings from research questions one through three, as well as information regarding the validity of the DCS-AAQ, assessed from multiple standpoints. These included looking at construct validity, convergent validity, and discriminant validity.

**Construct Validity.** Construct validity refers to the degree to which a test measures what it claims or is intended to measure (Peter, 1981). Construct validity was addressed in

this study by directly looking at the internal properties of the AAQ-II and DCS-AAQ. This was completed by conducting a confirmatory factor analysis (CFA) for the AAQ-II and DCS-AAQ looking at the model fit and factor loadings, as well as the inter-item correlations for each of the questions within these two measures.

A confirmatory factor analysis (CFA) was conducted for the AAQ-II and the DCS-AAQ. The CFA allowed us to examine construct validity to ensure that both measures were loading onto a single factor, as found in previously conducted research. The results of the CFA for the AAQ-II and DCS-AAQ can be found in Table 4. Four goodness of fit indices were conducted, the square-root mean residuals (SRMR), the Tucker-Lewis Index (TLI), and the root square mean error of approximation (RMSEA). Acceptable ranges for each indices are values less than .08 for the SRMR, values greater than .90 for the CFI and TLI, and values close to .05 for the RMSEA (Hu & Bentler, 1999; MacCallum, Brown, & Sugawara, 1996). As seen in the table, the AAQ-II displayed good model fit, although the RMSEA was slightly elevated. Additionally, all of the items on the AAQ-II loaded onto a single factor. For the DCS-AAQ, the CFA showed an almost equal level of model fit, with all seven of the items also loaded onto a single factor.

Inter-item correlations were also examined for each of the measures of psychological flexibility. The inter-item correlations for the DCS-AAQ can be seen in Table 2, and the inter-item correlations for the AAQ-II can be seen in Table 3. As seen in Table 2, the inter-item correlations for the DCS-AAQ were slightly lower than one would hope to find, and thus, slightly lower than correlations in the acceptable (e.g. values > .7) range of values (George & Mallery, 2005). For the AAQ-II, the inter-item correlations were found to be in the acceptable range (e.g., values > .7) for six of seven of the items.

**Convergent Validity.** Convergent validity refers to the extent to which measures that are designed to be theoretically related are, in fact, related (Peter, 1981). For this study, convergent validity is of interest in two ways. First, because the DCS-AAQ was designed to measure the construct of psychological flexibility, which also is the goal of the AAQ-II, the correlation between the two constructs should be strong. Second, as found in previous research (Bond et al., 2011), both measures of psychological flexibility should be related to the construct of psychological distress, as measured by the GHQ-12.

In regards to the first interest, a bivariate correlation analysis was conducted and revealed a positive linear relation, as is shown in Figure 5. Results from the analysis revealed that a significant relation exists,  $r(93) = .77$ , 95% CI [.60, .87],  $p < .001$ , between scores on the AAQ-II ( $M = 15.08$ ,  $SD = 10.28$ , 95% CI [12.92, 17.20]) and scores on the DCS-AAQ ( $M = 13.80$ ,  $SD = 7.65$ , 95% CI [12.36, 15.48]). This relation is strong enough to suggest that the two measures of psychological flexibility are highly interrelated.

Convergent validity was also examined by examining the relation between psychological flexibility (as measured by AAQ-II and the DCS-AAQ) and psychological distress/general mental health (as measured by the GHQ-12). Results from these bivariate correlation analyses indicated that a significant and strong positive relation exists,  $r(91) = .78$ , 95% Bca CI [.64, .87],  $p < .001$ , between psychological distress and psychological flexibility, as well as a significant and very strong relation between psychological distress and the DCS-modified version of psychological flexibility,  $r(91) = .67$ , 95% Bca CI [.43, .79],  $p < .001$ .

**Discriminant Validity.** Discriminant validity refers to the extent to which measures that are designed to be theoretically unrelated are, in fact, unrelated (Peter, 1981). With

regard to discriminant validity, results from the preliminary evidence show that there are two ways in which the DCS-AAQ distinctly separates itself from and adds more to the findings than the AAQ-II. First, the correlation between job satisfaction and psychological flexibility was stronger for the DCS-AAQ than the AAQ-II, and (2) the DCS-AAQ was correlated with more of the nine facets of job satisfaction (as measured by the JSS) than the AAQ-II.

As described in research question 2, results from the bivariate correlation analysis indicated that a significant negative linear relation exists,  $r(93) = -.43$ , 95% Bca CI [-.56, -.24],  $p < .001$ , between job satisfaction (as measured by the JSS) and the DCS-AAQ, and this was a stronger relation when compared to the relation between job satisfaction and the AAQ-II,  $r(94) = -.27$ , 95% Bca CI [-.48, -.01],  $p = .009$ .

With regard to the facets involved within job satisfaction, additional bivariate correlational analyses revealed that the DCS-AAQ was significantly correlated with six of the nine facets, as compared to the AAQ-II, which was significantly correlated with only two of the nine facets.

The modified DCS-AAQ ( $M = 13.80$ ,  $SD = 7.65$ , 95% Bca CI [12.36, 15.49]) was significantly correlated with the facets of promotion ( $M = 11.99$ ,  $SD = 4.49$ , 95% Bca CI [11.14, 12.93]),  $r(93) = -.37$ , 95% Bca CI [-.53, -.16],  $p < .001$ , contingent rewards ( $M = 12.56$ ,  $SD = 5.00$ , 95% Bca CI [11.51, 13.48]),  $r(93) = -.30$ , 95% Bca CI [-.48, -.14],  $p = .003$ , operating conditions ( $M = 14.39$ ,  $SD = 3.39$ , 95% Bca CI [13.71, 15.05]),  $r(93) = -.31$ , 95% Bca CI [-.47, -.11],  $p = .002$ , coworkers ( $M = 16.61$ ,  $SD = 4.05$ , 95% Bca CI [15.77, 17.47]),  $r(93) = -.24$ , 95% Bca CI [-.34, -.13],  $p < .023$ , nature of work, ( $M = 19.38$ ,  $SD = 4.61$ , 95% Bca CI [18.39, 20.27]),  $r(93) = -.58$ , 95% Bca CI [-.74, -.24],  $p < .001$ , and

communication, ( $M = 14.69$ ,  $SD = 4.63$ , 95% Bca CI [13.71, 15.57]),  $r(93) = -.40$ , 95% Bca CI [-.54, -.20],  $p < .001$ .

The AAQ-II ( $M = 15.26$ ,  $SD = 10.39$ , 95% Bca CI [13.13, 17.47]) was significantly correlated with the facets of nature of work ( $M = 19.38$ ,  $SD = 4.61$ , 95% Bca CI [18.39, 20.27]),  $r(93) = -.39$ , 95% Bca CI [-.63, .00],  $p < .001$ , and communication, ( $M = 14.69$ ,  $SD = 4.63$ , 95% Bca CI [13.71, 15.57]),  $r(93) = -.24$ , 95% Bca CI [-.47, .03],  $p < .022$ .

Therefore, taking into account all of the information presented, a tentative argument can be made that a potential utility may exist for a modified measure of psychological flexibility specifically designed around the roles and responsibilities of DCS.

**Research Question 5. What percentage of staff working in the direct care role serving individuals with disabilities are deemed to be “at risk”? Would an ACT-based intervention be more effective and a better use of an organization’s resources applied to this subset of individuals deemed to be “at risk”?**

The three different measures of psychological distress/ mental health (GHQ-12, AAQ-II, DCS-AAQ) were used to determine if a subset of respondents could be seen as “at risk”, or at an increased likelihood to experience heightened levels of stress. Distinctive criteria were used to determine “at risk” for the measures focused on psychological flexibility and psychological distress. For the GHQ-12, “at risk” was defined as total scores greater than 4 using the binary method of scoring. This was based on the use of scores greater than 4 as a cut-off point or criteria in previous research conducted (Moffat, McConnachie, Ross, & Morrison, 2004; Guthrie et al., 1998). For the AAQ-II and the modified version of the AAQ-II specifically for DCS, “at risk” was defined as scores greater than 24. This was again, based on a criteria used in previously conducted research (Bond et al., 2011).

Based on these criteria, 21 (22.8%) respondents were shown to be “at risk”, or more vulnerable to experiencing heightened levels of stress based on their scores on the GHQ-12. In regards to scores on the AAQ-II, 15 (16%) respondents would be classified as “at risk”, with scores higher than 24. Lastly, on the DCS-modified version of the AAQ-II, 6 (6.5%) respondents scored greater than 24 to put them in the “at risk” category. Along with this, many of the respondents who were deemed to be in the “at risk” category for one of the three measures, were also included in the “at risk” category based on their scores on the other measures.

For the respondents that scored in the “at risk” category for the DCS-AAQ, five of the six respondents (83.3%) also scored in the “at risk” category for the GHQ-12. For the respondents that scored in the “at risk” category for the AAQ-II, 12 of the 15 respondents (80%) also scored in the “at risk” category for the GHQ-12. It is also worth noting that one of the 15 respondents (6.7%) was excluded from the analysis due to missing data on the GHQ-12.

Results from these analyses reveal that in regards to follow-up steps, it may be a more efficient and a more effective use of an organization’s resources to specifically focus on individuals scoring in this “at risk” category when implementing a stress management workshop or intervention.

## **Discussion**

### **Summary of Results and Implications**

The purpose of this study was to better understand the relations between psychological flexibility, psychological distress, and job satisfaction among DCS serving individuals with intellectual and developmental disabilities. This study also sought to

determine the necessity/potential utility of a modified version of psychological flexibility specifically designed around the role of DCS. Finally, this study looked to determine what percentage of the population working as DCS serving individuals with disabilities could be considered in an “at risk” category, and thus, have a higher probability of benefitting from a stress management workshop designed around the processes used in Acceptance and Commitment Therapy.

By taking a step back from implementation of an ACT-based intervention, this study more thoroughly documents the role of psychological flexibility in DCS, as well as how it relates to psychological distress and job satisfaction. More generally, this study also adds to the direct care literature, by specifically looking at variables affecting staff serving in the direct care role for persons with IDD across both day treatment and residential settings. Further, this study provides support for a new measurement tool that can be used by human service organizations to see how staff are dealing with workplace stress, and whether or not they are dealing with it in a flexible and non-judgmental manner.

**Research Question 1.** The finding of a strong relation between the GHQ-12 and the AAQ-II is consistent with the research to date documenting that psychological distress and psychological flexibility are strongly inter-related concepts and are predictive of one other, with higher scores of psychological distress (e.g., scores on the GHQ-12) positively correlated with elevated scores of psychological inflexibility (e.g., scores on both the AAQ-II and DCS-AAQ). But, while others have documented this relation in the literature, this study is the first documenting a very strong correlation. Hayes et al. (2006) found that in a review of the literature, psychological flexibility (as measured by the original AAQ) had an average correlation of  $r = .40$  with the GHQ-12 based on three previously published studies.

Additionally, in the preliminary psychometric findings of the AAQ-II, Bond et al. (2011), found that the correlation between the GHQ-12 and the AAQ-II was  $r = .32$ , based on a sample of 583 individuals working in a large UK bank, and  $r = .51$ , based on a sample of 872 individuals working in a financial institution in the UK, with both of these correlations being significant at the  $p < .01$  level. Taking into account various differences such as culture and the type of organization within which the survey was taken, this is still a rather large increase in the size of the relation found in the results of this particular study when compared to previous research. In order to better understand this relation and whether or not this strong correlation is found across other types of organizations and other types of caregiving roles, more research is warranted.

It was equally noteworthy that a strong relation was found between the scores on the DCS-AAQ and the GHQ-12. The DCS-AAQ was created to address psychological flexibility as related to specific roles and responsibilities of DCS within the human service setting. Therefore, to find an almost equally strong relation between the GHQ-12 and the DCS-AAQ as that between the GHQ-12 and the AAQ-II is promising. We expected to find the AAQ-II to be highly related to the GHQ-12, as both of these measures are measuring similar constructs. Therefore, the component that is promising from this study is that the DCS-AAQ and GHQ-12 are highly related, in that even with the addition of job roles and demands, a very similar relationship between psychological flexibility and psychological distress was found. Thus, this study provides preliminary evidence that the DCS-AAQ may be more closely related to psychological distress than one would have previously hypothesized.

Given that we used a non-clinical sample, the relation between psychological flexibility and psychological distress may be even more compelling. Measures of

psychological flexibility and psychological distress are typically used with a clinical sample, individuals experiencing significant levels of stress, anxiety, or other psychological distress. In contrast, although some individuals in our sample likely would fall into this category, most were likely not representative of a clinical population, as seen by the large cluster of individuals on the graph, positively skewing the data. Therefore, because it is a clinical measurement tool being used on a non-clinical sample, this cluster both clarifies and supports the fact that the measurement tools for psychological distress and psychological flexibility were working the way in which they were psychometrically intended.

**Research Question 2.** The results of the two correlations between psychological flexibility (as measured by the AAQ-II and DCS-AAQ) and job satisfaction (as measured by the JSS) provide preliminary evidence of the relation one would expect to obtain. First, it makes sense that for both of the correlations, a negative linear relation was found. As levels of psychological *inflexibility* increase (e.g., scores on the AAQ-II and DCS-AAQ go up), then one would expect the levels of job satisfaction to decrease. Results from this study support this argument and more importantly, provide preliminary support for this relation within the DCS population. Further, the results from this study provide initial evidence that the DCS-modified measure created for this study more effectively measures psychological flexibility as it relates to variables associated with the workplace setting of DCS. If the DCS-AAQ is in fact tapping into psychological flexibility as it relates to the job of DCS, then the results should show a larger correlation between job satisfaction and the DCS-AAQ than the AAQ-II. This is exactly what was found. Therefore, based on the results of the analyses conducted, there is promising evidence of the potential utility of the DCS-AAQ as it relates to both psychological flexibility and staff's satisfaction on the job.

**Research Question 3.** It was of interest to this study to determine whether scores on either measure of psychological flexibility were influenced by age, hours worked per week, length of employment at one's current organization, and years in the field. When looking at the four predictor variables (age, hours worked per week, length of employment, and years in the field) on scores of psychological flexibility for both the AAQ-II and the DCS-AAQ, it is possible that the follow-up analyses revealed a lack of statistically significant results due to the sample size involved with the study and the power associated with it. This could help explain why a significant main effect was found for the variable number of hours worked per week, with follow-up analyses reporting that no significant differences existed between the groups for scores on either the AAQ-II or DCS-AAQ.

With regards to the two-way interaction found in the MANOVA, there are various theoretical reasons as to why this finding may have occurred. Looking back, it was found that a significant mean difference existed for individuals aged 18-24 on scores of the AAQ-II when also included with the variable number of hours worked per week. More specifically, a significant difference ( $M_{diff} = 15.98$ ,  $SE = 6.71$ ,  $p = .027$ , 95% CI [2.02, 29.93]) was found between individuals working less than 30 hours per week ( $M = 24.78$ ,  $SD = 17.98$ , 95% CI [16.44, 33.12]) and individuals working 30 to 40 hours per week ( $M = 8.80$ ,  $SD = 2.49$ , 95% CI [-2.39, 19.99]), as well as a significant difference ( $M_{diff} = 11.88$ ,  $SE = 5.53$ ,  $p = .043$ , 95% CI [.38, 23.37]) between individuals working less than 30 hours per week and individuals working full-time ( $M = 12.90$ ,  $SD = 6.90$ , 95% CI [4.99, 20.81]).

In the introduction of this paper, a section was included with some of the more commonly endorsed stressors experienced by DCS. These included role ambiguity and conflict, inconsistent work schedules, client-related stressors, and low pay and benefits. It is

possible that three of these four types of stressors affect staff working less than 30 hours per week differently than those working either more hours or full time. These three stressors, in turn, could lead staff to experience lower levels of psychological flexibility, as they must not only deal with these work-related stressors, but also more general stressors experienced in other areas of their life.

One possible reason is that individuals working less than 30 hours per week may be at an increased likelihood to experience higher levels of role ambiguity and conflict than other DCS working more hours. In regards to this finding, it may be that staff younger in age are less able to effectively cope with the ambiguity, thus leading to greater levels of psychological inflexibility. It could also be that staff considered full-time work with a particular individual in a day-treatment setting or within the same home in a residential setting, therefore having a better idea of the responsibilities and job requirements they will come in contact with each day/week. It could also be that the individuals working less than 30 hours per week have more ambiguous set of work demands and a higher number of conflicts. When working across various homes or areas, staff may be working under different managers and administrators with different interpretations and expectations about how the same roles and responsibilities to be accomplished. What may be labeled as an incorrect or inefficient way of completing a job task in one area could be the customary way of doing the task in another part of the organization.

It could also be that these individuals are having to work more inconsistent work schedules, another stressor that has been shown to be prevalent in the DCS literature (White et al., 2006). As a full-time employee, staff may be at an increased likelihood to have a more rigid or structured schedule, with the staff working less hours left to fill in the gaps. This can

take a toll on a staff member's work-life balance. For example, they may be working afternoons one week and asked to work mornings the next week. In regards to psychological flexibility, this stressor has various implications for the staff. It may be the cause for more distress in their outside life, as they have to balance work and family. It is also known that younger staff have the highest probability of pursuing or being in higher education. This would be particularly problematic for the staff working more inconsistent schedules, as they may be more prone to miss class, get behind on their work, or drop out altogether since a set routine is unable to be made.

Lastly, it is also possible that since these individuals are working less than 30 hours per week, they are at an increased likelihood to experience difficulties in meeting their financial demands, which in turn negatively affects their psychological flexibility. Previous research has shown low pay and benefits to be a major stressor among those working as DCS serving individuals with IDD (Buckhalt et al., 1990; Larson & Hewitt, 2005). This would be especially so for those working part-time hours, as they would have a reduced amount of pay for working less hours, which occurs on top of the already low base rates of pay. To cope with this, they may have to find a second form of employment, or somehow figure out a way to get by on the pay from working only a part-time position. This would have the potential to greatly impact their psychological flexibility and general distress, since it may be unknown to the staff whether or not their basic needs will be met on a weekly basis.

Another explanation for this finding is that individuals aged 18 to 24 working less than thirty hours a week have lower levels of psychological flexibility and are working fewer hours a week due to their heightened levels of psychological inflexibility. Staff may have willingly chosen to work part time, as their levels of psychological flexibility and

psychological distress are more similar to those found in a clinical population, thus serving as an impediment and altering daily routines. It is also possible that these stressors serve as amplifiers to general distress experienced by staff outside of their work. As this is not an exhaustive list, there are numerous other variables outside of those regarding work that may be contributing to this finding. Therefore, to better understand this finding and the other potential variables, more research on this topic is warranted.

**Research question 4.** The next research question addressed the need and potential utility of a modified version of psychological flexibility specifically designed around the role of DCS providing support to individuals with IDD. The DCS-AAQ was created in an attempt to be more responsive to the specific job demands of DCS. The results from the analyses conducted provide a strong base of preliminary support for the creation of this measure, as well as evidence that the DCS-AAQ is targeting a variable or construct that is void in the research to date. Consequently, there are also various implications attached to the creation of the DCS-AAQ.

Through the methodical demonstration of construct validity in the DCS-AAQ, the measure can now be added to the lists of tools that can be used to examine workplace performance by those in the human service setting providing support to individuals with IDD. It is well understood that staff working in the direct care role deal with stressors that are common across many different types of occupations. The main issue though, is that on top of this, there is an additional collection of stressors specific to this type of work. Based on the preliminary evidence, it is highly probable that the DCS-AAQ is tapping into to a factor beyond what would be described as general psychological flexibility. In fact, it could be argued that the DCS-AAQ is more of a measurement tool to measure workplace

psychological flexibility as it relates to the roles and responsibilities of DCS. This assumption would be based off the fact that (1) there is strong convergence of the data where it should be expected, as seen by the relation between the AAQ-II and the DCS-AAQ, the statistically similar relation of the AAQ-II and DCS-AAQ with the GHQ-12, and the single factor loading of both measures of psychological flexibility as shown by the CFA and (2) there is evidence of proper discrimination between the measures, as demonstrated by the DCS-AAQ's stronger relation with overall job satisfaction, three times the amount of statistically significant relations with the facets involved within job satisfaction, and what looks to be a unique addition of a work-related component added to general psychological flexibility within those working in DCS role.

**Research Question 5.** The data from the current study suggest that a relatively large subset of individuals working as DCS meet the criteria for being at an above-average likelihood to experience heightened levels of general and work-related stress, based on the cut-off scores used in previously conducted research. This means that the possibility exists for an organization to directly target a subset of individuals that may have an increased likelihood of benefitting from an ACT-based stress management workshop. As such, there are various implications on both the individual and organizational level.

On the individual level, the findings of the current study suggest that a significant proportion of individuals working in the DCS role are experiencing heightened levels of psychological distress, work-related stress, or some combination thereof. In this study, 20% of individuals working as DCS reported experiencing clinically significant levels of psychological distress, a proportion similar to that found within previously conducted research (Hatton et al., 1999). This is a troubling finding, especially within the human service

setting, as on-the-job performance is directly related to the quality of care provided to the individuals being supported. This finding, when taken into account with previously conducted research, means that there is a significant proportion of individuals being served that are at risk of being under or improperly served (Rose, 1999).

On an organizational level, these findings provide evidence that the implementation of an ACT-based workshop may be more effective and a greater use of the organization's resources if offered only to individuals who have been deemed to be "at risk" rather than to the entire population of DCS. There would be numerous benefits attached to this type of implementation. For one, applying a workshop to only individuals who had been previously shown to be "at risk" would be a much better use of resources, as the organization would be able to limit the number of individuals taking part in the workshop. This would allow for less staff to be taken from their work and less staff needed to cover for the staff who would be taking part in the study, thus leading to less resources being used overall when compared to standard in-service training.

By limiting the number of staff, the workshop would also be able to take on a more intimate and tailored approach. By using the population of individuals who were previously shown to be "at risk", the implementers of the workshop would be able to talk about stressors highly endorsed by the staff. This would allow for a more intimate experience, as well as more tailored examples of how staff can work through these particular problems they are experiencing. Additionally, this would also allow for greater clarification of the stressors being experienced, since the data would only consist of their responses.

Previous research has shown that when implementing an ACT-based workshop, potential ceiling effects may have been present (Bethay et al., 2013) in the intervention, in

that there were staff participating who were already psychologically flexible and not experiencing heightened levels of psychological distress. By implementing a workshop for only this subset of individuals, there would be a greater chance of documenting true effects. In previous research conducted, these psychologically flexible individuals served as a confound in the results, taking away from the interpretations that could be made from the study. When they were taken out of the analyses, much different findings were shown. Therefore, by starting with the “at risk” subset, researchers could reduce the effect of this confound from the beginning and have a greater probability of experimentally demonstrating the true effect of this intervention.

### **Limitations**

The current study had several limitations that should be taken into account when interpreting the results. First, all of the measures used in the study were self-report measures. Due to the use of self-report measures, there is an increased likelihood that biases may have been involved in the participant’s responses. These biases may have led to an inflated number of responses that were answered in a more socially accepted or desirable manner. To best account for this, the researcher maintained anonymity across the entire process of the questionnaire.

Extra steps were also taken to maintain confidentiality with the paper-based questionnaire (e.g., separate envelopes for the questionnaire and demographic information). However, staff may have still had a concern, as many of the responses were collected and turned into an area supervisor. Taking part in the study and filling out the questionnaire was also voluntary. Therefore, there may also be some level of selection bias in the types of individuals who responded to the survey. When looking at the data, there is no reason to

suspect that any of these issues were present in the data set, as mean scores and ranges are similar to other research conducted with this population.

In this study, it is possible that Type I and Type II errors occurred and confounded the results. With regard to Type I error, running multiple statistical tests increases the rate of familywise error, or the probability of committing a Type I error, also known as a false rejection of the null hypothesis. Even though proper safeguards were put in place, it must still be considered that significant results may be a product of running multiple tests, and not of an actual effect. Therefore, this should be taken into account when interpreting the results.

There was also the threat of Type II error in the study. The sample consisted of 99 respondents taking part in the study, which is a small sample. Because of this, there were some data analyses that could not be run due to too few participants in a group. This was most problematic for research question number 3 and running the MANOVA. Breaking the groups down with a combination of two predictor variables meant some times as many as six groups could be included in the analysis, leaving too few a number of participants in one or more of the groups. Due to the high threat of committing a Type II error, there may have also been insufficient power to document a true effect. Both of these reasons would help explain the lack of significant results found in the analysis for research question 3.

### **Future Directions**

Future research could involve a systematic replication of this study with more participants across a broader range of organizations that serve individuals with IDD. Increasing the number of participants, as well as the types of organizations for which they work, would allow for an enhanced understanding of how each of the constructs included this study (e.g., psychological flexibility, psychological distress, job satisfaction) affect DCS.

This would allow for additional evidence to also be gathered on the efficacy and potential utility of the DCS-AAQ as a measure of psychological flexibility specifically for this population of staff, as well as how it fits within the ACT-related literature in particular, and the direct care literature in general. A replication with more participants would increase the generalization and implications of the findings, as there would be a more varied sample taking part in the study.

Additionally, future research should also look to add additional demographic variables to the study and see what effect they have on the interpretation of the results. Some of these demographic variables that may be of particular importance include the severity of disability of the population being served, age of population being served, presence of problem behavior, ratio of clients to staff, and ratio of supervisors to staff. Adding these variables may produce yet another set of predictor variables that organizations could use to specifically target staff that have the highest probability of benefitting from a stress management workshop.

Another direction to be taken is to apply the results to the design of stress management workshops for this population. There are two different ways in which this could be done. One way would be to conduct a workshop with very large population including a large number of individuals “at risk” and those “not as risk” based on their on pre-workshop scores of psychological flexibility and psychological distress. By conducting a workshop with both types of individuals present, researchers could specifically look to see if there is a differential effect of the workshop based on group type. This would help account for a potential confound in the two ACT-workshop studies conducted to date where the workshops were not specifically tailored around the roles and demands DCS face while on the job.

The second way would be to conduct a targeted ACT-based workshop, including only the subset of individuals deemed to be “at risk”. By directly targeting the subset of individuals who could most benefit, the organization would use less financial resources when implementing the workshop, since only a subset of staff would need to be included. Additionally, the results of a targeted workshop would be able to specifically address the question of the size of effect an ACT-based workshop can have on DCS. Both of the options present promising lines of future research, as each would allow for researchers to better understand (1) if there truly is a need for this type of workshop, and if so, (2) how and for whom the workshop should be conducted.

More broadly, if this research has positive findings, it would also be interesting to see how these variables and this type of workshop could be applied to other types of staff working in the caregiving role. This could be done by implementing a workshop with other types of staff working in the caregiving role (e.g., elderly support, hospice, etc.), where job roles and demands have equally high numbers of negative individual (e.g., stress, distress) and organizational outcomes (e.g., turnover, absenteeism, burnout).

### References

- Adams, J. (2009) Cost savings from health promotion and stress management interventions. *OD Practitioner, 41*, 31-37.
- American Psychological Association. (2015). Stress: The different kinds of stress. Retrieved from <http://www.apa.org/helpcenter/stress-kinds.aspx>
- Arthur, A. R. (2000). Employee assistance programmes: The emperor's new clothes of stress management? *British Journal of Guidance and Counselling, 28*, 549-559.
- Baer, R. A. (2006). *Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications*. San Diego, CA: Elsevier Academic Press.
- Bakker, G. M. (2009). In defence of thought stopping. *Clinical Psychologist, 13*, 59-68. doi:10.1080/13284200902810452.
- Barnes-Holmes D, Staunton C, Whelan R, Barnes-Holmes Y, Commins S, & Walsh D. (2005). Derived stimulus relations, semantic priming, and event-related potentials: Testing a behavioral theory of semantic networks. *Journal of the Experimental Analysis of Behavior, 84*, 417-430.
- Baum, A., Garofalo, J. P., & Yali, A. M. (1999). Socioeconomic status and chronic stress: Does stress account for SES effects on health?. In N. E. Adler, M. Marmot, B. S. McEwen, J. Stewart, N. E. Adler, M. Marmot, ... J. Stewart (Eds.), *Socioeconomic status and health in industrial nations: Social, psychological, and biological pathways* (pp. 131-144). New York, NY: New York Academy of Sciences.
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York, NY: International Universities Press.
- Berens, N. M., & Hayes, S. C. (2007). Arbitrarily applicable comparative relations:

- Experimental evidence for a relational operant. *Journal of Applied Behavior Analysis*, *40*, 45-71.
- Bethay, J. S., Wilson, K. G., Schnetzer, L. W., Nassar, S. L., & Bordieri, M. J. (2013). A controlled pilot evaluation of acceptance and commitment training for intellectual disability staff. *Mindfulness*, *4*, 113-121. doi:10.1007/s12671-012-0103-8
- Biglan, A., Layton, G. L., Jones, L. B., Hankins, M., & Rusby, J. C. (2013). The value of workshops on psychological flexibility for early childhood special education staff. *Topics in Early Childhood Special Education*, *32*, 196-210.  
doi:10.1177/0271121411425191
- Blumenthal, S., Lavender, T., & Hewson, S. (1998). Role clarity, perception of the organization and burnout amongst support workers in residential homes for people with intellectual disability: A comparison between a national health service trust and a charitable company. *Journal of Intellectual Disability Research*, *42*, 409-417.
- Bond, F. W., & Bunce, D. (2000). Mediators of change in emotion-focused and problem-focused worksite stress management interventions. *Journal of Occupational Health Psychology*, *5*, 156-163.
- Bond, F. W., & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction, and work performance. *Journal of Applied Psychology*, *88*, 1057-1067. doi:10.1037/0021-9010.88.6.1057
- Bond, F. W., & Flaxman, P. E. (2006). The ability of psychological flexibility and job control to predict learning, job performance, and mental health. *Journal of Organizational Behavior Management*, *26*, 113-130. doi:10.1300/J075v26n01\_05
- Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., ...

- Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42*, 676-688.  
doi:10.1016/j.beth.2011.03.007
- Bond, F. W., Hayes, S. C., & Barnes-Holmes, D. (2006). Psychological flexibility, ACT, and organizational behavior. *Journal of Organizational Behavior Management, 26*, 25-54.  
doi:10.1300/J075v26n01\_02
- Brinkborg, H., Michanek, J., Hesser, H., & Berglund, G. (2011). Acceptance and commitment therapy for the treatment of stress among social workers: A randomized controlled trial. *Behaviour Research and Therapy, 49*, 389-398.  
doi:10.1016/j.brat.2011.03.009
- Brown, L. A., Gaudiano, B. A., & Miller, I. W. (2011). Investigating the similarities and differences between practitioners of second- and third-wave cognitive-behavioral therapies. *Behavior Modification, 35*, 187-200. doi:10.1177/0145445510393730
- Buckhalt, J. A., Marchetti, A. & Bearden, L. J (1990) Sources of job stress and job satisfaction reported by direct-care staff of large residential mental retardation facilities. *Education and Training in Mental Retardation, 25*, 344-351.
- Bunce, D. (1997). What factors are associated with the outcome of individual-focused worksite stress management interventions? *Journal of Occupational and Organizational Psychology, 70*, 1-17. doi:10.1111/j.2044-8325.1997.tb00627.x
- Carnaby, S., & Cambridge, P. (2002). Getting personal: An exploratory study of intimate and personal care provision for people with profound and multiple intellectual disabilities. *Journal of Intellectual Disability Research, 46*, 120-132. doi:10.1046/j.1365-

- 2788.2002.00358.x
- Cooper, C. L., Dewe, P., & O'Driscoll, M. P. (2001). *Organizational Stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage Publications.
- Cushway, D., & Tyler, P. A. (1994). Stress and coping in clinical psychologists. *Stress Medicine, 10*, 35-42.
- Davies, L., Felce, D., Lowe, K. & de Paiva, S. (1991) The evaluation of NIMROD, a community-based service for people with mental handicap: Revenue costs. *Health Services Management Research, 4*, 170-180.
- Devany, J. M., Hayes, S. C., & Nelson, R. O. (1986). Equivalence class formation in language-able and language-disabled children. *Journal of the Experimental Analysis of Behavior, 46*, 243-257.
- Devereux, J. M., Hastings, R. P., & Noone, S. J. (2009). Staff stress and burnout in intellectual disability services: work stress theory and its application. *Journal of Applied Research in Intellectual Disabilities, 22*, 561-573.
- Dobson, K. S., & Hamilton, K. E. (2009). Cognitive restructuring: Behavioral tests of negative cognitions. In W. T. O'Donohue, J. E. Fisher, W. T. O'Donohue, J. E. Fisher (Eds.), *General principles and empirically supported techniques of cognitive behavior therapy* (pp. 194-198). Hoboken, NJ: John Wiley & Sons Inc.
- Dyer, S., & Quine, L. (1998). Predictors of job satisfaction and burnout among the direct care staff of a community learning disability service. *Journal of Applied Research in Intellectual Disabilities, 11*, 320-332.
- Ellis, A. (1957). Outcome of employing three techniques of psychotherapy. *Journal of*

- Clinical Psychology*, 13, 344-350.
- Firth-Cozens, J., & Payne, R. (1999) (Eds.), *Stress in health professionals*. Chichester, UK: John Wiley.
- Flaxman, P. E., & Bond, F. W. (2010a). A randomised worksite comparison of acceptance and commitment therapy and stress inoculation training. *Behaviour Research And Therapy*, 48, 816-820. doi:10.1016/j.brat.2010.05.004
- Flaxman, P. E., & Bond, F. W. (2010b). Worksite stress management training: Moderated effects and clinical significance. *Journal of Occupational Health Psychology*, 15, 347-358. doi:10.1037/a0020522
- Gardner, B., Rose, J., Mason, O., Tyler, P., & Cushway, D. (2005). Cognitive therapy and behavioural coping in the management of work-related stress: An intervention study. *Work & Stress*, 19, 137-152. doi:10.1080/02678370500157346
- George, D., & Mallery, P. (2005). *SPSS for Windows step by step: A simple guide and reference 12.0 update (5th ed.)*. Auckland, New Zealand: Pearson Education New Zealand.
- Giga, S. I., Cooper, C. L., & Faragher, B. (2003). The development of a framework for a comprehensive approach to stress management interventions at work. *International Journal of Stress Management*, 10, 280-296.
- Goldberg, D. P. (1978). *Manual of the general health questionnaire*. Windsor, UK: National Foundation for Educational Research.
- Guthrie, E., Black, D., Bagalkote, H., Shaw, C., Campbell, M., & Creed, F. (1998). Psychological stress and burnout in medical students: a five-year prospective longitudinal study. *Journal of The Royal Society of Medicine*, 91, 237-243.

- Harris, R. (2009). *ACT made simple: An easy-to-read primer on acceptance and commitment therapy*. Oakland, CA: New Harbinger.
- Hastings, R. P. (1995) Understanding factors that influence staff responses to challenging behaviors: An exploratory interview study. *Mental Handicap Research*, 8, 296-320.
- Hatton, C., Brown, R., Caine, A. & Emerson, E. (1995) Stressors, coping strategies, and stress-related outcomes among direct care staff in staffed houses for people with learning disabilities. *Mental Handicap Research*, 8, 252-271.
- Hatton, C., Rivers, M., Mason, H., Mason, L., Kiernan, C., Emerson, E., ... Reeves, D. (1999). Staff stressors and staff outcomes in services for adults with intellectual disabilities: The Staff Stressor Questionnaire. *Research in Developmental Disabilities*, 20, 269-285. doi:10.1016/S0891-4222(99)00009-8
- Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy*, 35, 639-665. doi:10.1016/S0005-7894(04)80013-3
- Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds.) (2001). *Relational frame theory: A post-Skinnerian account of human language and cognition*. New York, NY: Kluwer Academic/Plenum Press.
- Hayes, S.C., Fox, E., Gifford, E.V., Wilson, K.G., Barnes-Holmes, D., & Healy, O. (2001). Derived relational responding as learned behavior. In S. C. Hayes, D. Barnes-Holmes, B. Roche (Eds.), *Relational frame theory: A post-Skinnerian account of human language and cognition* (pp. 21-50). New York, NY: Kluwer Academic/Plenum Press.

- Hayes, S.C., Luoma, J.B., Bond, F.W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research & Therapy, 44*, 1-25.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York, NY: Guilford Press.
- Hayes, S. C., Strosahl, K. D., Bunting, K., Twohig, M., & Wilson, K. G. (2004). What is acceptance and commitment therapy. In S. C. Hayes & K. D. Strosahl (Eds.), *A practical guide to acceptance and commitment therapy* (pp. 3-29). New York, NY: Springer.
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3*, 424-453.
- Hubbard, K., & Falco, F. E. (2015). Relaxation techniques. In A. D. Kaye, N. Vadivelu, R. D. Urman, A. D. Kaye, N. Vadivelu, R. D. Urman (Eds.), *Substance abuse: Inpatient and outpatient management for every clinician* (pp. 337-357). New York, NY: Springer Science + Business Media.
- Ilgen, D. R., & Hollenbeck, J. R. (1991). The structure of work: Job design and roles. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology: Vol. 2*, (pp. 165-207). Palo Alto, CA: Consulting Psychologists Press.
- Ivancevich, J. M., Matteson, M. T., Freedman, S. M., & Phillips, J. S. (1990). Worksite stress management interventions. *American Psychologist, 45*, 252-261. doi:10.1037/0003-066X.45.2.252
- Jackson, S. E. (1983). Participation in decision making as a strategy for reducing job-related strain. *Journal of Applied Psychology, 68*, 3-19.

- Jackson, S. E., & Schuler, R. S. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings. *Organizational Behavior & Human Decision Processes*, 36, 16-78.
- Jenkins, R., Rose, J., & Lovell, C. (1997). Psychological well-being of staff working with people who have challenging behaviour. *Journal of Intellectual Disability Research*, 41, 502-511. doi:10.1111/j.1365-2788.1997.tb00743.x
- Kishita, N., & Shimada, H. (2011). Effects of acceptance-based coping on task performance and subjective stress. *Journal of Behavior Therapy and Experimental Psychiatry*, 42, 6-12. doi:10.1016/j.jbtep.2010.08.005
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.
- Larson, S. A., & Hewitt, A. S. (2005). *Staff recruitment, retention, and training strategies for community human service organizations*. Minneapolis, MN: Paul H. Brookes Publishing Company.
- Larson, S. A., Hewitt, A. S. & Lakin, C. (2004). Multiperspective analysis of workforce challenges and their effects on consumer and family quality of life. *American Journal on Mental Retardation*, 109, 481-500.
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford.
- Lloyd, J., Bond, F. W., & Flaxman, P. E. (2013). The value of psychological flexibility: Examining psychological mechanisms underpinning a cognitive behavioural therapy intervention for burnout. *Work & Stress*, 27, 181-199.  
doi:10.1080/02678373.2013.782157

Longmore, R. J., & Worrell, M. (2007). Do we need to challenge thoughts in cognitive behavior therapy? *Clinical Psychology Review, 27*, 173-187.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130-149.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual*. Palo Alto, CA: Consulting Psychologists Press.

McConachie, D. J., McKenzie, K., Morris, P. G., & Walley, R. M. (2014). Acceptance and mindfulness-based stress management for support staff caring for individuals with intellectual disabilities. *Research in Developmental Disabilities, 35*, 1216-1227.  
doi:10.1016/j.ridd.2014.03.005

Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapiro I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin, 132*, 327-353.

Mitchell, G. & Hastings, R. P. (2001). Coping, burnout, and emotion in staff working in community services for people with challenging behaviors. *American Journal on Mental Retardation, 106*, 448-459.

Moffat, K., McConnachie, A., Ross, S., & Morrison, J. (2004). First year medical student stress and coping in a problem-based learning medical curriculum. *Medical Education, 38*, 482-491.

Moore, J. (2009). Some thoughts on the relation between derived relational responding and verbal behavior. *European Journal of Behavior Analysis, 10*, 31-47.

Mullarkey, S., Wall, T. D., Warr, P. B., Clegg, C. W., & Stride, C. B. (1999). *Measures of*

*job satisfaction, mental health and job-related well-being*. Sheffield, UK: Institute of Work Psychology.

Murphy, L. R., & Sauter, S. L. (2003). The USA perspective: Current issues and trends in the management of work stress. *Australian Psychologist, 38*, 151-157.

Noone, S. J., & Hastings, R. P. (2010). Using acceptance and mindfulness-based workshops with support staff caring for adults with intellectual disabilities. *Mindfulness, 1*, 67-73. doi:10.1007/s12671-010-0007-4

Office of the Assistant Secretary for Planning and Evaluation. (2006). *The supply of direct support professionals serving individuals with intellectual disabilities: Report to Congress*. Washington, DC: Office of Disability, Aging and Long- Term Care Policy, ASPE, U.S. Department of Health and Human Services.

Paraprofessional Healthcare Institute. (2014). Direct care workers. Retrieved from <http://phinational.org/direct-care-workers-glance>

Peter, J. P. (1981). Construct validity: A review of basic issues and marketing practices. *Journal of Marketing Research, 18*, 133-145.

Qualtrics, Inc. (2010). Qualtrics Survey Software [Computer software]. Retrieved from <http://www.qualtrics.com/>.

Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: A meta-analysis. *Journal of Occupational Health Psychology, 13*, 69-93. doi:10.1037/1076-8998.13.1.69

Robertson, J., Hatton, C., Felce, D., Meek, A., Carr, D., Knapp, M., ... Lowe, K. (2005). Staff stress and morale in community-based settings for people with intellectual disabilities and challenging behaviour: A brief report. *Journal of Applied Research in Intellectual*

- Disabilities, 18, 271-277.*
- Rose, J. (1999). Stress and residential staff who work with people who have an intellectual disability: A factor analytic study. *Journal of Intellectual Disability Research, 43*, 268-278. doi:10.1046/j.1365-2788.1999.00210.x
- Schulz, R., Visintainer, P., & Williamson, G. M. (1990). Psychiatric and physical morbidity effects of caregiving. *Journal of Gerontology, 45*, 181-191.
- Skinner, B. F. (1953). Some contributions of an experimental analysis of behavior to psychology as a whole. *American Psychologist, 8*, 69-78.
- Skirrow, P., & Hatton, C. (2007). Burnout amongst direct care workers in services for adults with intellectual disabilities: A systematic review of research findings and initial normative data. *Journal of Applied Research in Intellectual Disabilities, 20*, 131-144.
- Song, L. Y., & Singer, M. (2006). Life stress, social support, coping and depressive symptoms: A comparison between the general population and family caregivers. *International Journal of Social Welfare, 15*, 172-180.
- Spector, P. E. (1994). *Job satisfaction: Application, assessment, causes, and consequences*. Thousand Oaks, CA: Sage.
- Stafford-Brown, J., & Pakenham, K. I. (2012). The effectiveness of an ACT informed intervention for managing stress and improving therapist qualities in clinical psychology trainees. *Journal of Clinical Psychology, 68*, 592-613. doi:10.1002/jclp.21844
- Stewart, I., Barnes-Holmes, D., Roche, B., & Smeets, P. M. (2001). Generating derived relational networks via the abstraction of common physical properties: A possible model of analogical reasoning. *The Psychological Record, 51*, 381-408.

- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., & Weich, S., (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes*, 5, 1-13.
- Thompson, L., & Rose, J. (2011). Does organizational climate impact upon burnout in staff who work with people with intellectual disabilities? A systematic review of the literature. *Journal of Intellectual Disabilities*, 15, 177-193.  
doi:10.1177/1744629511419616
- van der Klink, J. J. L., Blonk, R. W. B., Schene, A. H., & van Dijk, F. J. H. (2001). The benefits of interventions for work-related stress. *American Journal of Public Health*, 91, 270-276.
- Wegner, D., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality*, 62, 615-640.
- White, P., Edwards, N., & Townsend-White, C. (2006). Stress and burnout amongst professional carers of people with intellectual disability: Another health inequity. *Current Opinion in Psychiatry*, 19, 502-507.
- Wilson, K. G., Hayes, S. C., Gregg, J., & Zettle, R. D. (2001). Psychopathology and psychotherapy. In S. C. Hayes, D. Barnes-Holmes, B. Roche (Eds.), *Relational frame theory: A post-Skinnerian account of human language and cognition* (pp. 211-237). New York, NY: Kluwer Academic/Plenum Press.
- World Health Organization. (2015). Stress at the workplace. Retrieved from [http://www.who.int/occupational\\_health/topics/stressatwp/en/](http://www.who.int/occupational_health/topics/stressatwp/en/)
- Yovel, I., Mor, N., & Shakarov, H. (2014). Examination of the core cognitive components of cognitive behavioral therapy and acceptance and commitment therapy: An analogue

investigation. *Behavior Therapy*, 45, 482-494. doi:10.1016/j.beth.2014.02.007

Table 1

*Descriptive Statistics for Demographic Variables*

Variable	N	Percentage
Age		
18-24	25	28.1%
25-30	23	25.8%
31-40	16	18.0%
41-50	10	11.2%
51-60	12	13.5%
61-70	3	3.4%
Gender		
Male	20	22.5%
Female	69	77.5%
Education		
Some high school, no diploma	6	6.7%
High school graduate, diploma, or certificate	19	21.3%
Some college credit, no degree	30	33.7%
Trade/technical/vocational training	4	4.5%
Associates degree	14	15.7%
Bachelor's degree	13	14.6%
Master's degree	2	2.3%
Professional degree	1	1.1%
Years Experience		
< 6 months	6	6.7%
6 months to 1 year	8	9.0%
1-3 years	24	27.0%
4-8 years	16	18.0%
8+ years	35	39.3%
Length at Organization		
< 6 months	12	13.5%
6 months to 1 year	10	11.2%
1-3 years	35	39.3%
4-8 years	11	12.4%
8+ years	20	22.5%
Average number of hours worked per week		
10-20 hours	4	4.5%

20-30 hours	8	9.0%
30-40 hours	20	22.5%
Full time	57	64.0%

Table 2

*Inter-Item Correlations for Questions on the DCS-AAQ*

Question	1	2	3	4	5	6	7
1. Memories about stressful things that have happened to others or me at work make it difficult for me to work effectively.	1						
2. I have a tough time acknowledging mistakes made on the job and moving forward.	.59	1					
3. I worry about not being able to control my thoughts or feelings while I am working with a client.	.58	.55	1				
4. The way I think or feel prevents me from having a fulfilling career.	.53	.48	.64	1			
5. My emotions get in the way of my performance with clients.	.61	.68	.66	.68	1		
6. It seems like most of my coworkers are doing their job better than I am.	.32	.28	.25	.29	.46	1	
7. Worries get in the way of me succeeding at work.	.66	.54	.61	.66	.77	.57	1

Table 3

*Inter-Item Correlations for Questions on the AAQ-II*

Question	1	2	3	4	5	6	7
1. My painful experiences and memories make it difficult for me to live a life that I would value	1						
2. I am afraid of my feelings.	.76	1					
3. I worry about not being able to control my worries and feelings.	.80	.81	1				
4. My painful memories prevent me from having a fulfilling life.	.90	.82	.83	1			
5. Emotions cause problems in my life.	.78	.81	.82	.84	1		
6. It seems like most people are handling their lives better than I am.	.64	.60	.61	.71	.71	1	
7. Worries get in the way of my success.	.77	.79	.82	.82	.85	.77	1

Table 4

*Goodness of Fit Indices for the AAQ-II and DCS-AAQ*

	AAQ-II	DCS-AAQ
Goodness of Fit Indices		
SRMR	.028	.046
CFI	.951	.943
TLI	.927	.914
RMSEA	.167	.127

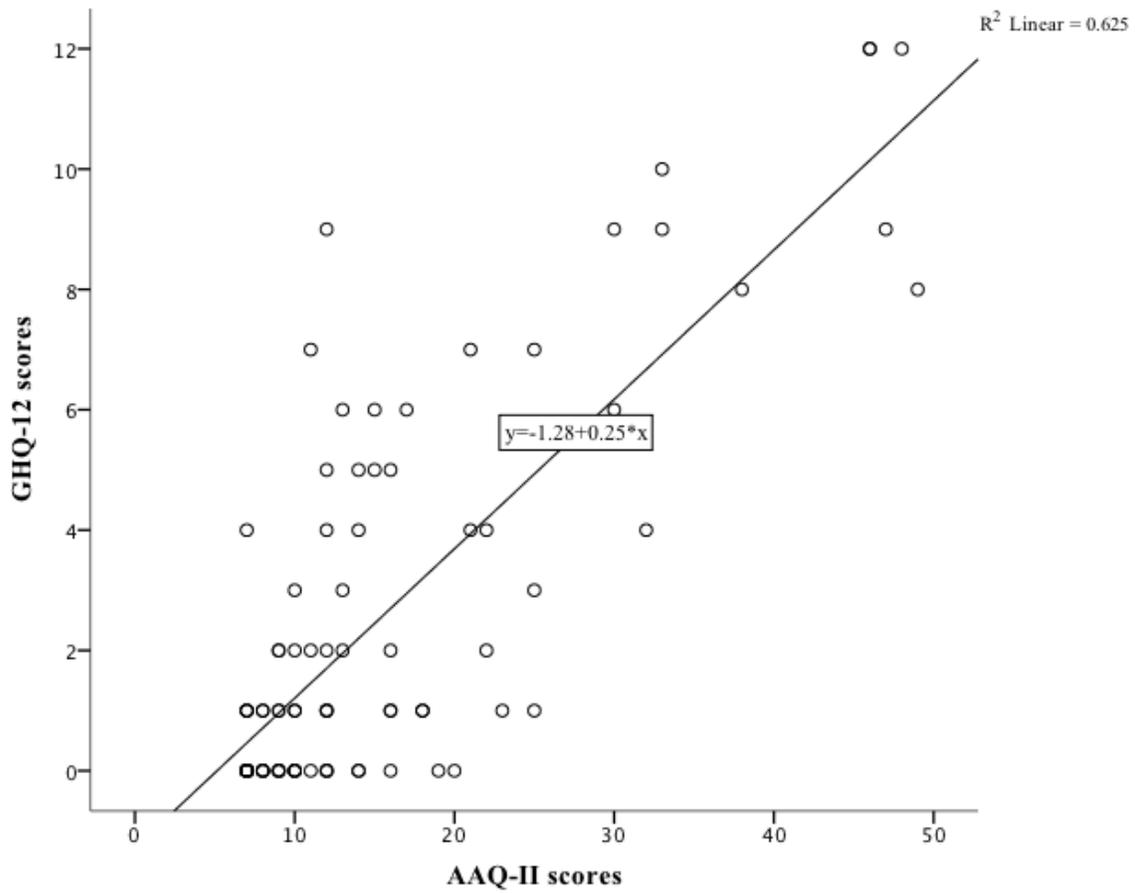


Figure 1. Bivariate correlation analysis for scores on the AAQ-II and GHQ-12. In this figure, the sum of scores on the AAQ-II are depicted on the horizontal axis and the binary sum of scores on the GHQ-12 are shown on the vertical axis. Graphed is the correlation between the two. Pearson's  $r = .78$ .

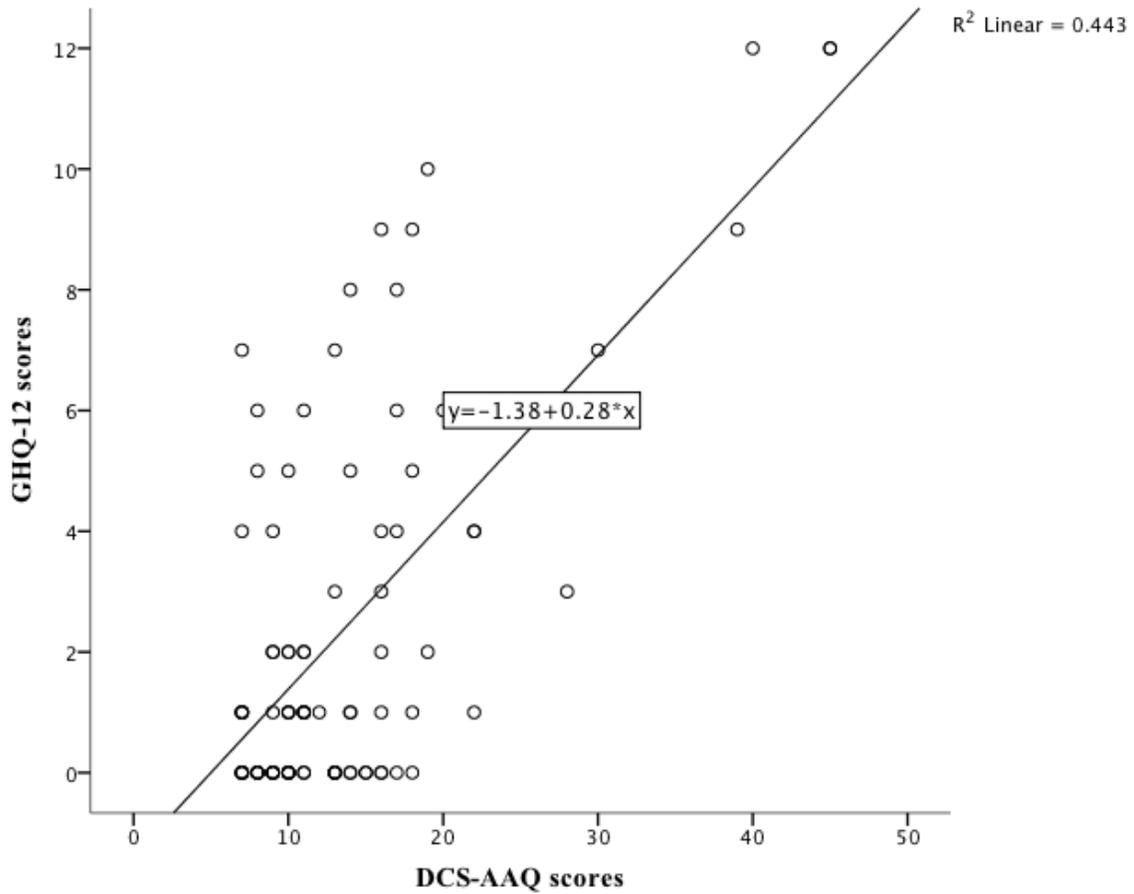
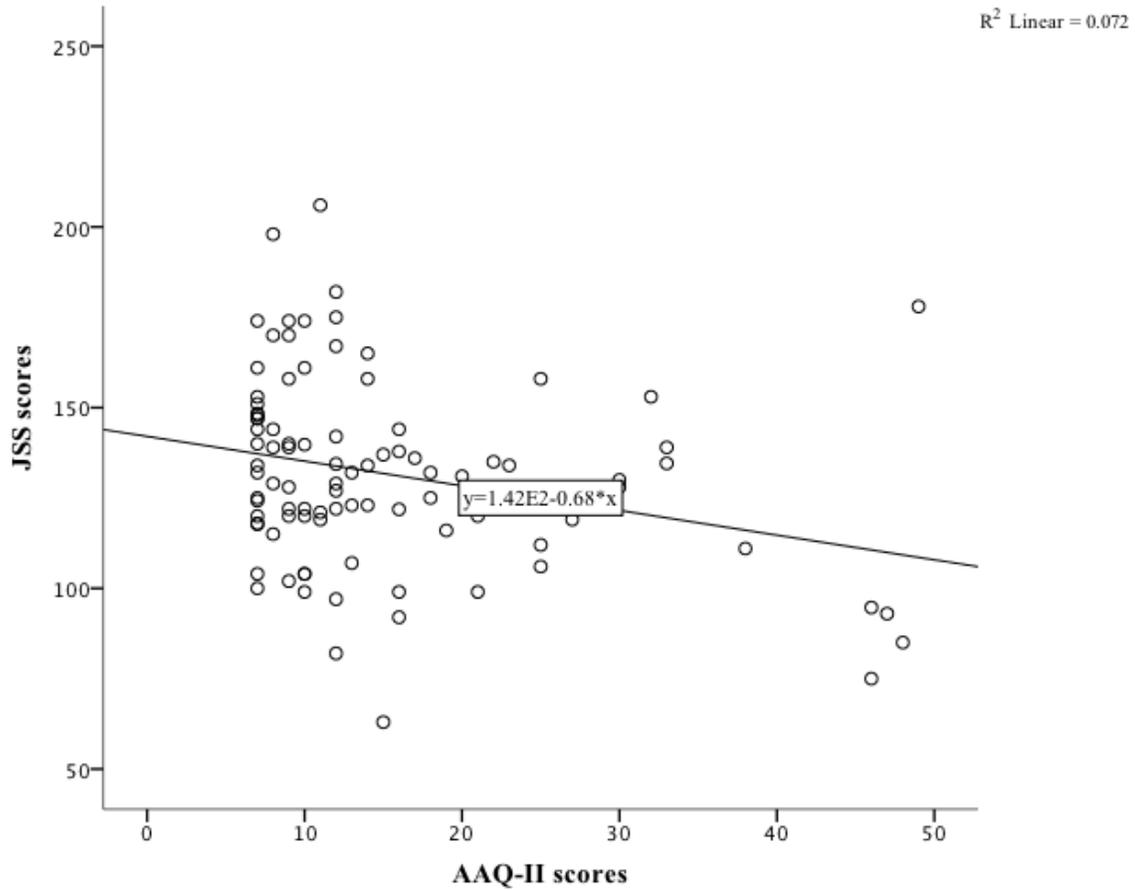
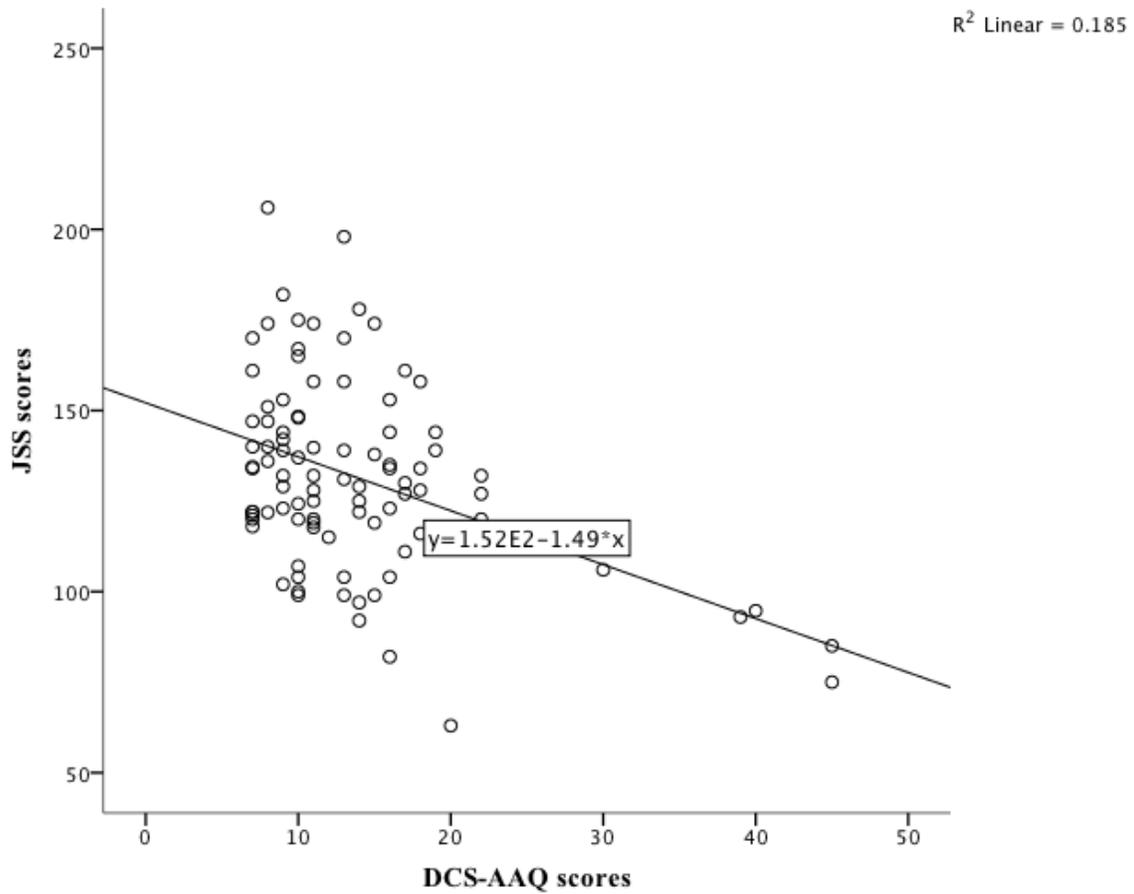


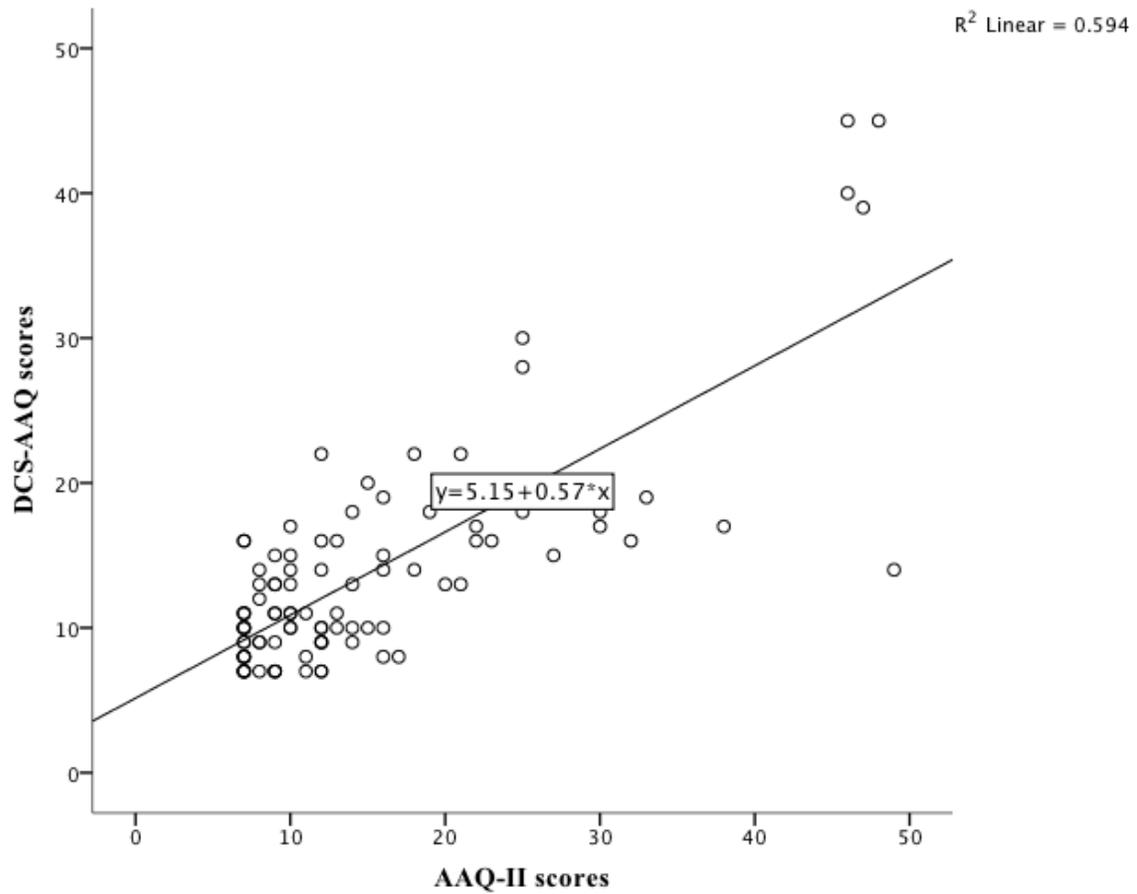
Figure 2. Bivariate Correlation Analysis for scores on the DCS-AAQ and GHQ-12. In this figure, the sum of scores on the DCS-AAQ are depicted on the horizontal axis and the binary sum of scores on the GHQ-12 are shown on the vertical axis. Graphed is the correlation between the two. Pearson's  $r = .67$ .



*Figure 3.* Bivariate Correlation Analysis for scores on the AAQ-II and JSS. In this figure, the sum of scores on the AAQ-II are depicted on the horizontal axis and the sum of scores on the JSS are shown on the vertical axis. Graphed is the correlation between the two. Pearson's  $r = -.27$ .



*Figure 4.* Bivariate Correlation Analysis for scores on the DCS-AAQ and JSS. In this figure, the sum of scores on the DCS-AAQ are depicted on the horizontal axis and the sum of scores on the JSS are shown on the vertical axis. Graphed is the correlation between the two. Pearson's  $r = -.43$ .



*Figure 5.* Bivariate Correlation Analysis for scores on the AAQ-II and DCS-AAQ. In this figure, the sum of scores on the AAQ-II are depicted on the horizontal axis and the sum of scores on the DCS-AAQ are shown on the vertical axis. Graphed is the correlation between the two. Pearson's  $r = .77$ .

## Appendix A: IRB Approval



### INSTITUTIONAL REVIEW BOARD

Office of Research Protections  
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**To:** Tyler Erath  
 Psychology  
 CAMPUS MAIL

**From:** IRB Administration  
**Date:** October 15, 2015  
**RE:** Notice of IRB Exemption  
**Study #:** 16-0077  
**Study Title:** Acceptance-Based Interventions for Direct Care Staff: An Assessment of Need  
**Exemption Category:** 2. Anonymous Educational Tests, Surveys, Interviews, or Observations

This study involves minimal risk and meets the exemption category cited above. In accordance with 45 CFR 46.101(b) and University policy and procedures, the research activities described in the study materials are exempt from further IRB review.

**Study Change:** Proposed changes to the study require further IRB review when the change involves:

- an external funding source,
- the potential for a conflict of interest,
- a change in location of the research (i.e., country, school system, off site location),
- the contact information for the Principal Investigator,
- the addition of non-Appalachian State University faculty, staff, or students to the research team, or
- the basis for the determination of exemption. Standard Operating Procedure #9 cites examples of changes which affect the basis of the determination of exemption on page 3.

**Investigator Responsibilities:** All individuals engaged in research with human participants are responsible for compliance with University policies and procedures, and IRB determinations. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records. The PI should review the IRB's list of PI responsibilities.

**To Close the Study:** When research procedures with human participants are completed, please send the Request for Closure of IRB Review form to [irb@appstate.edu](mailto:irb@appstate.edu).

If you have any questions, please contact the Research Protections Office at (828) 262-2692 (Robin).

Best wishes with your research.

### Websites for Information Cited Above

Note: If the link does not work, please copy and paste into your browser, or visit <https://researchprotections.appstate.edu/human-subjects>.

1. Standard Operating Procedure #9: <http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/IRB20SOP920Exempt%20Review%20Determination.pdf>

**Appendix B**

## Job Satisfaction Survey (Spector, 1994)

<b>JOB SATISFACTION SURVEY</b> Paul E. Spector Department of Psychology University of South Florida Copyright Paul E. Spector 1994, All rights reserved.							
PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.		Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree very much	
1	I feel I am being paid a fair amount for the work I do.	1	2	3	4	5 6	
2	There is really too little chance for promotion on my job.	1	2	3	4	5 6	
3	My supervisor is quite competent in doing his/her job.	1	2	3	4	5 6	
4	I am not satisfied with the benefits I receive.	1	2	3	4	5 6	
5	When I do a good job, I receive the recognition for it that I should receive.	1	2	3	4	5 6	
6	Many of our rules and procedures make doing a good job difficult.	1	2	3	4	5 6	
7	I like the people I work with.	1	2	3	4	5 6	
8	I sometimes feel my job is meaningless.	1	2	3	4	5 6	
9	Communications seem good within this organization.	1	2	3	4	5 6	
10	Raises are too few and far between.	1	2	3	4	5 6	
11	Those who do well on the job stand a fair chance of being promoted.	1	2	3	4	5 6	
12	My supervisor is unfair to me.	1	2	3	4	5 6	
13	The benefits we receive are as good as most other organizations offer.	1	2	3	4	5 6	
14	I do not feel that the work I do is appreciated.	1	2	3	4	5 6	
15	My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5 6	

16	I find I have to work harder at my job because of the incompetence of people I work with.	1	2	3	4	5	6
17	I like doing the things I do at work.	1	2	3	4	5	6
18	The goals of this organization are not clear to me.	1	2	3	4	5	6

19	I feel unappreciated by the organization when I think about what they pay me.	1	2	3	4	5	6
20	People get ahead as fast here as they do in other places.	1	2	3	4	5	6
21	My supervisor shows too little interest in the feelings of subordinates.	1	2	3	4	5	6
22	The benefit package we have is equitable.	1	2	3	4	5	6
23	There are few rewards for those who work here.	1	2	3	4	5	6
24	I have too much to do at work.	1	2	3	4	5	6
25	I enjoy my coworkers.	1	2	3	4	5	6
26	I often feel that I do not know what is going on with the organization.	1	2	3	4	5	6
27	I feel a sense of pride in doing my job.	1	2	3	4	5	6
28	I feel satisfied with my chances for salary increases.	1	2	3	4	5	6
29	There are benefits we do not have which we should have.	1	2	3	4	5	6
30	I like my supervisor.	1	2	3	4	5	6
31	I have too much paperwork.	1	2	3	4	5	6
32	I don't feel my efforts are rewarded the way they should be.	1	2	3	4	5	6
33	I am satisfied with my chances for promotion.	1	2	3	4	5	6
34	There is too much bickering and fighting at work.	1	2	3	4	5	6
35	My job is enjoyable.	1	2	3	4	5	6
36	Work assignments are not fully explained.	1	2	3	4	5	6

### Appendix C

Acceptance and Action Questionnaire-II (Bond, Hayes, Baer et al., 2011)

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true

1. My painful experiences and memories make it difficult for me to live a life that I would value.	1	2	3	4	5	6	7
2. I'm afraid of my feelings.	1	2	3	4	5	6	7
3. I worry about not being able to control my worries and feelings.	1	2	3	4	5	6	7
4. My painful memories prevent me from having a fulfilling life.	1	2	3	4	5	6	7
5. Emotions cause problems in my life.	1	2	3	4	5	6	7
6. It seems like most people are handling their lives better than I am.	1	2	3	4	5	6	7
7. Worries get in the way of my success.	1	2	3	4	5	6	7

This is a one-factor measure of psychological inflexibility, or experiential avoidance. Score the scale by summing the seven items. Higher scores equal greater levels of psychological inflexibility.

**Appendix D**

## Direct Care Staff Acceptance and Action Questionnaire

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>never true</b>	<b>very seldom true</b>	<b>seldom true</b>	<b>sometimes true</b>	<b>frequently true</b>	<b>almost always true</b>	<b>always true</b>

1. Memories about stressful things that have happened to others or me at work make it difficult for me to work effectively.	1	2	3	4	5	6	7
2. I have a tough time acknowledging mistakes made on the job and moving forward.	1	2	3	4	5	6	7
3. I worry about being able to control my thoughts or feelings while I am working with a client.	1	2	3	4	5	6	7
4. The way I think or feel prevents me from having a fulfilling career.	1	2	3	4	5	6	7
5. My emotions get in the way of my performance with clients.	1	2	3	4	5	6	7
6. It seems like I most of my coworkers are doing their job better than I am.	1	2	3	4	5	6	7
7. Worries get in the way of me succeeding at work.	1	2	3	4	5	6	7

**Appendix E**

## General Health Questionnaire-12 (Goldberg, 1978)

## Items

1. Able to concentrate
2. Capable of making decisions
3. Face up to problems
4. Lost sleep over worry
5. Constantly under strain
6. Could not overcome difficulties
7. Unhappy and depressed
8. Loss of confidence in self
9. Thinking of self as worthless
10. Play useful part in things
11. Enjoy day-to-day activities
12. Reasonably happy

### **Vita**

Tyler George Erath was born in High Point, North Carolina. He received his Bachelor of Science in Psychology with a concentration in Business from Appalachian State University in 2013. In the fall of 2014, he accepted a research assistantship in Psychology at Appalachian State University and began study toward a Master of Arts degree in Experimental Psychology. The M.A. was awarded in May 2016. He plans to begin study at the University of Kansas in the fall of 2016, where he will begin work toward his Ph.D. in Behavioral Psychology within the department of Applied Behavioral Sciences.