

# Dialectical Behavior Therapy Skills for College Students with Autism Spectrum Disorder: A Pilot Study

Alyssa Conigliaro, Fallon Kane, Gina Lehr, Stephanie Grindell, Rita Mercante, and Taylor Groth.

## Abstract

Students ( $N= 32$ ) with Autism Spectrum Disorder (ASD) completed four skills modules of dialectical behavior therapy (DBT) to examine if mindfulness-based interventions using DBT techniques reduced coping deficits associated with ASD. The overall study suggests that mindfulness can provide individuals with ASD with a previously absent emotional coping strategy.



## Introduction

Randomized controlled trials have demonstrated the efficacy of DBT in the treatment of multifarious domains such suicidal and nonsuicidal self-injurious behaviors, substance abuse (Linehan et. Al., 1999), treatment retention, and emotion regulation (Robins & Rosenthal, 2011). One of the critical components of DBT is *mindfulness*. Broadly, mindfulness refers to the mental state achieved by focusing one’s awareness on the present moment, while calmly acknowledging and accepting one’s feelings, thoughts, and bodily sensations, used as a therapeutic technique. Such practices have shown that learning to focus on the present develops control over attention, and nonjudgmental observation permits recognition of the consequences of behavior, reducing impulsiveness (Linehan, 1993). Overall, mindfulness practices have been found to be highly efficacious in reducing the overt symptomatology for a variety of psychic disorders, including anxiety, depression, somatic disorders, and eating disorders (Bogels et. al, 2008).

Despite such apparent empirical evidence, there is a dearth of literature concerning whether DBT skills and associated mindfulness practices are effective techniques for reducing the emotional deficits associated with ASD. ASD is a complex diagnosis, and to further complicate matters, many of those with ASD are diagnosed comorbidly with anxiety disorders, stress disorders, and anger management disorders (Scarpa & Reyes, 2011). Some researchers (i.e., Mazefsky et. Al, 2013) suggest that poor emotional regulation may be at the heart of many of the socio-emotional and behavioral deficits seen in the population. DBT includes an entire module dedicated to emotion regulation skills, which could be highly beneficial techniques for persons with ASD to learn.

## Method

An adapted version of the adult Dialectical Behavior Therapy (DBT) skills group was introduced to a college support program for students who self-disclose with ASD. Over the course of one academic year (approximately 33 weeks) the group completed the four skills modules of DBT: Mindfulness, emotion regulation, distress tolerance, and interpersonal effectiveness. Pre and post test outcomes were assessed.

Measures
*indicates a measure given as both a pre and post test
Beck Anxiety Inventory (BAI)*
Freiburg Mindfulness Inventory (MI)*
Toronto Alexithymia Scale (TAS-20)
Difficulties in Emotional Regulation Scale (DERS)*
Autism Quotient (AQ)



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**Table 1**

Measure	Mean (SD)
AQ TOTAL	27.47(6.65)
TAST1TOTAL	52.91(13.11)
TAST2TOTAL	55.18(14.4)
MIT1TOTAL	36.03(8.68)
MIT2TOTAL	36.82(12.05)
BAIT1TOTAL	16.00(12.84)
BAIT2TOTAL	18.24(14.03)
DERST1NONACCEPT	15.06(6.35)
DERST2NONACCEPT	13.82(6.84)
DERST1GOALS	16.81(4.99)
DERST2GOALS	16.82(3.89)
DERST1IMPULSE	14.67(7.17)
DERST2IMPULSE	16.92(7.45)
DERST1CLARITY	12.65(5.16)
DERST2CLARITY	11.58(4.77)
DERST1AWARE	14.71(5.46)
DERST2AWARE	13.59(5.44)
DERST1STRATEGIES	20.68(7.37)
DERST2STRATEGIES	20.58(7.39)
DERST1TOTAL	98.03(26.21)
DERST2TOTAL	96.35(26.26)

**Table 2**

Measure	Mean (SD)
MITDIF	-.1250(5.98)
BAIDIF	.3125(15.89)
DERSNONACCEPTDIF	-2.31(6.43)
DERSGOALSDIF	-.3750(3.46)
DERSIMPULSEDIF	1.416(4.50)
DERSAWAREDIF	-.0625(4.54)
DERSSTRATEGIESDIF	-1.00(7.43)
DERSTOTALDIF	-5.75(20.68)
TASDIF	3.875(10.62)

**Figure 1**

Model	R	R square	Adjusted R square	Std Error of the Estimate	R square Change	F change	Df1	df2	Sig F change
1	.617a	0.381	0.286	17.47986	0.381	4.001	2	13	.044
2	.617b	0.381	0.337	16.84515	0.00	.002	1	13	.967

A predictors: (Constant): MITDIF, MIT1TOTAL  
 b. Predictors: (Constant): MITDIF

**Figure 2**

Model	R	R square	Adjusted R square	Std Error	R square Change	F change	Df1	Df2	Sig F change
1	.887a	.786	.926	8.30991	.786	.459	8	1	.822
2	.886B	.785	.034	5.88620	-.001	.003	1	1	.963
3	.867C	.752	.257	5.16227	-.033	.307	1	2	.635
4	.856D	.733	.399	4.64024	-.019	.232	1	3	.663
5	.821E	.673	.412	4.59204	-.060	.897	1	4	.397
6	.790F	.624	.435	4.49917	-.050	.760	1	5	.423
7	.698G	.487	.340	4.863396	-.137	2.181	1	6	.190
8	.594H	.352	.271	5.111119	-.134	1.834	1	7	.218

- A. Predictors: (Constant): TAST2TOTAL, DERST2GOALS, AQTOTAL, DERT2NONACCEPT, DERST1NONACCEPT, DERST2STRATEGIES, MIT1TOTAL, DERST2TOTAL,
- B. Predictors: (Constant): TAST2TOTAL, DERST2GOALS, AQTOTAL, DERT2NONACCEPT, DERST1NONACCEPT, DERST2STRATEGIES, DERST2TOTAL
- C. Predictors: (Constant): TAST2TOTAL, DERST2GOALS, AQTOTAL, DERST2STRATEGIES, MIT1TOTAL, DERST2TOTAL
- D. Predictors: (Constant): TAST2TOTAL, AQTOTAL, DERST2STRATEGIES, MIT1TOTAL, DERST2TOTAL
- E. Predictors: (Constant): TAST2TOTAL, DERST2STRATEGIES, MIT1TOTAL, DERST2TOTAL
- F. Predictors: (Constant): TAST2TOTAL, DERST2STRATEGIES, DERST2TOTAL
- G. Predictors: (Constant): TAST2TOTAL, DERST2TOTAL
- H. Predictors: (Constant): TAST2TOTAL, DERST2TOTAL

## Results

**Table 1** displays the overall means from the three years that data was gathered from the participants in the Mindfulness Group. **Table 2** displays the overall mean differences between pre and post tests (differences being the value of the assessment at Time 2 subtracted from the value of the assessment at Time 1). In this time, the variable that decrease the most was overall Difficulties in Emotion Regulation, which decreased by 5.75 points. Throughout the three years that data was gathered, the average level of mindfulness, prior to taking part in group, as measured by the Freiberg Mindfulness Questionnaire was M=36.17(8.96). The average level of mindfulness after taking part in group was M=36.82(12.05). A paired-samples t-test revealed that this overall mean difference is not significant,  $p > .05$ , although the effect size increased ( $p = .170$ ) when students who rated as having possible alexithymia on the Toronto Alexithymia Scale were controlled for. Some significant correlations were found considering the pre-post difference measures. Most notably, a positive increase in mindfulness was negatively correlated with increases in overall difficulties in emotional regulation ( $r = -.617$ ) and with increases in poor strategies for managing emotion

Another assessment was performed to assess if mindfulness increase over the course of the DBT predicted change in DERS Limited Strategies for emotion regulation scale (**Figure 1**). A backwards linear regression revealed that change in mindfulness levels accounts for approximately 62% of the variability in this index.

An assessment was performed to assess which variables best predicted mindfulness at Time 2 (**Figure 2**). A backwards linear regression found that an equation utilizing the predictors of Total Alexithymia Rating at Time 2, Autism Quotient Score, DERS Nonacceptance of Emotional Responses (at T1 and T2), and DERS Limited Strategies accounted for nearly 95% of the variance in Mindfulness at Time 2. Autism Quotient score and DERS Limited were the most significant predictors. Overall, this suggests that certain deficits of emotion regulation and features of ASD affect level of mindfulness.

Comparing the assessment changes from pre to post, when divided by gender, yielded some interesting results. Male students (N=17) actually displayed only a slight decrease in self-reported difficulties in emotion regulation (M= -1.45, SD= 21.25), whereas females (N= 12) had a much larger decrease (M= -15.20, SD= 17.67); however, an independent samples t-test revealed this difference to not be statistically significant ( $p > .05$ ). Additionally, males actually demonstrated a mean increase in some subscales of self-reported difficulties in emotion regulation (DERSSTRATEGIES, M= 1.36, SD= 6.8; DERSIMPULSES, M= 2.50, SD= 3.42) whereas females demonstrated a mean decrease on the same scales ((DERSSTRATEGIES, M= -6.20, SD= 6.53; DERSIMPULSES, M= -0.750, SD= 6.13). The DERSSTRATEGIESDIF discrepancies between males and females was found to be significant ( $p > .05$ ). There was not a significant difference at the pre test. This suggests that, in some ways, females may respond better than males to a mindfulness intervention.

## Discussion

Overall, it was found that those participants who experienced an increase in mindfulness (a module of DBT), also reported feeling less limited by their current emotional coping strategies ( $t(2, 13) = -2.935$ ,  $p > .05$ ,  $R = 0.62$ ). This suggests that mindfulness may have helped the students feel more in control of their emotions, and as though they had better ability to handle every day life stresses. For college students with ASD, who are faces with a number of stressors each day that may otherwise overwhelm their adaptive capacities, using mindfulness as a tool may lead to better adjustment scores.

Moreover, it was found that females reported significantly lower levels of having such limited strategies after the group than males ( $p > .05$ ), a difference that did not exist in the pre-test, suggesting that possibly females may respond better to mindfulness training than males.

Further research will explore differential adjustment outcomes (i.e., GPA) in response to mindfulness interventions.