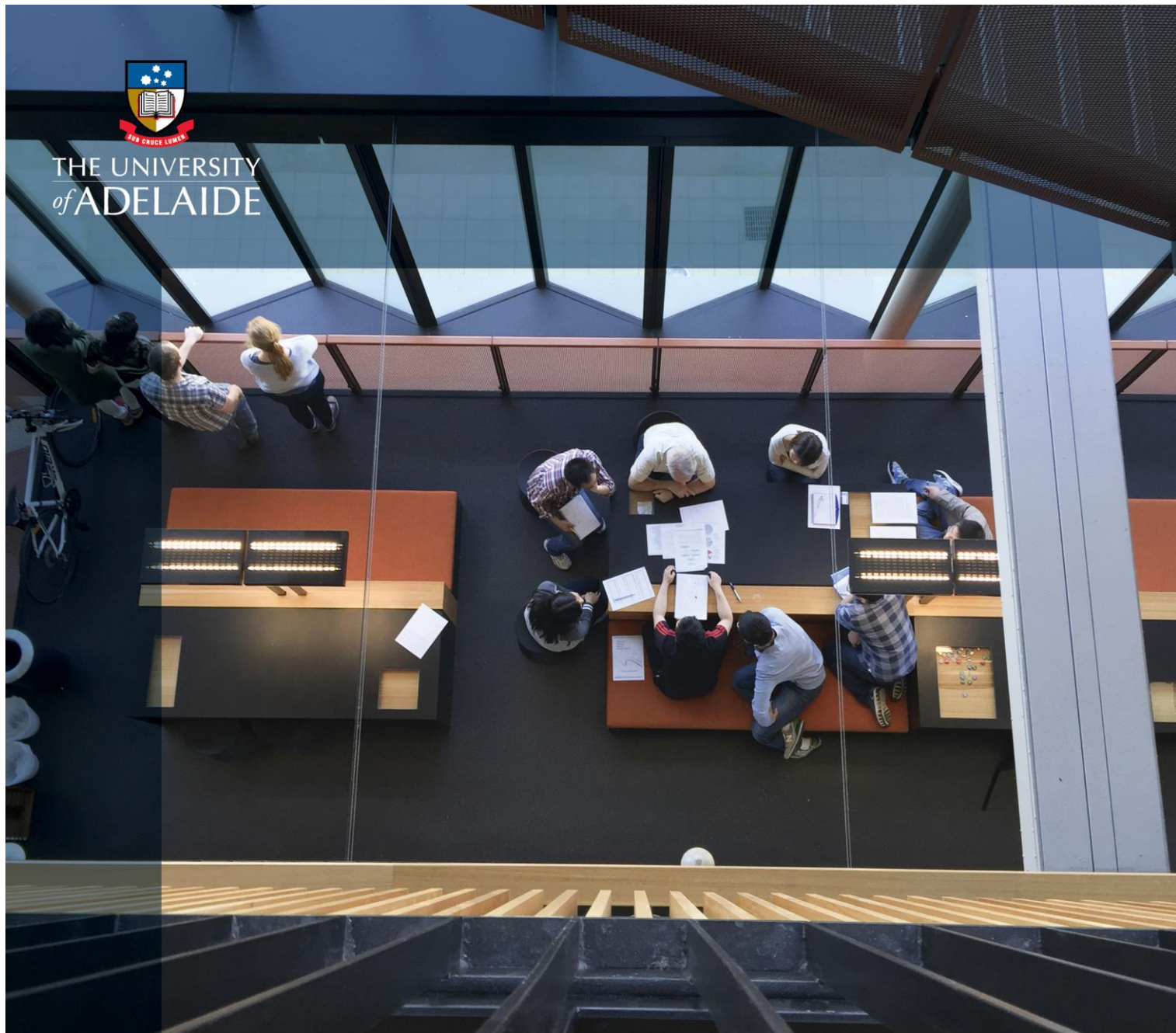




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EVALUATION OF THE AUTISM SA ACCEPTANCE AND COMMITMENT THERAPY GROUP

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Evaluation of the Autism SA Acceptance and Commitment Therapy (ACT) Group

Acceptance and Commitment Therapy Group

The Autism SA Acceptance and Commitment Therapy (ACT) program is a therapeutic group that aims to help participants to more effectively manage issues such as anxiety, stress, addictions, depression, and burnout by teaching the skills needed to handle difficult thoughts and feelings more effectively. Examples of topics covered include clarifying your values, mindfulness, and what to do in a crisis, with learning exercises completed within group sessions. The program is available to adult clients with Autism Spectrum Disorders (ASD) registered with Autism SA and their parents/carer and runs for eight 90-minute sessions, which are held at Autism SA.

Evaluation Aim

The ACT program has been run by Autism SA for over 8 years, with two programs held each year. At the beginning of the group program the facilitator asks participants to complete a questionnaire called the Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980), with a further ATQ completed at the end of the program. The evaluation reported here aims to examine the effectiveness of the ACT program using these pre and post-intervention ATQ responses that the facilitator has collected in order to establish an evidence base for the program.

Automatic Thoughts Questionnaire (ATQ)

The ATQ is a 30-item measure designed to measure the occurrence of automatic negative thoughts (or self-statements) considered important to the development, maintenance and treatment of mental illnesses, including depression. Within the ATQ four negative thought factors are measured: Personal Maladjustment and Desire for Change (PMDC), Negative Self-Concepts and Negative Expectations (NSNE), Low Self-Esteem (LSE), and Helplessness. Appendix A contains a copy of the ATQ and information about the psychometric properties of the questionnaire.

The ATQ includes 30 statements that respondents are asked to use a 5-point Likert scale to rate:

- 1) The frequency of occurrence of the thought (rated 1 = not at all, 2 = sometimes, 3 = moderately often, 4 = often, and 5 = all the time), with higher scores indicating high levels of negative thoughts.
- 2) The degree the respondent believes the thought (rated 1 = not at all, 2 = somewhat, 3 = moderately, 4 = very much, and 5 = totally), with higher scores indicating greater belief in the negative thoughts.

Participants

In order to enable this evaluation, the Autism SA ACT program facilitator provided researchers with the de-identified pre- and post-intervention ATQ measure information for 51 group participants. Of these 51 participants, both pre- and post-intervention ATQ responses were available for 35 participants. These participants attended the group program between 2012 and 2017 (2012 = 6, 2013 = 3, 2014 = 5, 2015 = 13, 2016 = 5, 2017 = 3). The demographic information for the 35 participants is shown in Table 1. As can be seen, two-thirds of the ACT group participants were carers, the majority of whom were female. Participant age was only available for the adults with ASD (mean = 35.09 years, SD = 10.75, range 18 – 54 years).

Table 1. Demographic information for ACT group participants.

	Person with ASD (n = 14)	Carer (n = 21)	Total (N = 35)
Gender			
Male	11 (79%)	5 (76%)	16 (46%)
Female	3 (21%)	16 (24%)	19 (54%)
Marital Status			
Single	12 (86%)	4 (19%)	16 (46%)
Married	1 (7%)	16 (76%)	17 (49%)
Divorced	1 (7%)	1 (5%)	2 (5%)
Employment status			
Employed	7 (50%)	21 (100%)	28 (80%)
Unemployed	7 (50%)	-	7 (20%)
Highest education level			
Year 10	4 (29%)	-	4 (11%)
Year 12	3 (21%)	4 (19%)	7 (20%)
Degree	7 (50%)	17 (81%)	24 (69%)
Intellectual Disability			
Yes	1 (7%)	-	1 (3%)
No	13 (93%)	21 (100%)	34 (97%)

Results

The range of scores for the ATQ total frequency measures were: pre-intervention 30 to 130 and post-intervention 30 to 146. With regard to the change in ATQ total frequency measures the range was -76 to 12 (mean -8.7, SD 15.6), with negative scores indicating less frequent negative thoughts at post-intervention. The results show that most but not all participants had improved with respect to the frequency of negative thoughts.

The range of scores for the ATQ total belief measures were: pre-intervention 30 to 131 and post-intervention 30 to 94. With regard to the change in ATQ total belief measures the range was -69 to 10 (mean -12.2, SD 16.5), with negative scores indicating less belief in the negative thoughts at post-intervention. Again these findings show that most but not all

participants had improved with respect to the extent they believed in the negative thoughts.

Table 2. Means (and standard deviations) for the four ATQ factor scores and total scores used for statistical comparisons.¹

	Person with ASD	Carer	Total
Total ATQ Frequency Score			
Pre-Intervention	70.5 (27.6)	66.1 (30.1)	67.0 (28.8)
Post-Intervention	55.9 (18.5)	60.9 (28.5)	59.1 (25.1)
Total ATQ Belief Score			
Pre-Intervention	72.3 (28.7)	64.6 (29.3)	67.5 (28.9)
Post-Intervention	57.1 (21.2)	54.3 (20.7)	55.4 (20.6)
PMDC Frequency Score			
Pre-Intervention	11.7 (5.5)	12.2 (5.8)	12.1 (5.6)
Post-Intervention	11.4 (5.7)	11.3 (5.6)	11.3 (5.5)
PMDC Belief Score			
Pre-Intervention	12.0 (6.0)	11.9 (5.4)	11.9 (5.5)
Post-Intervention	10.0 (4.6)	10.4 (4.4)	10.2 (4.4)
NSNE Frequency Score			
Pre-Intervention	17.6 (7.1)	15.0 (6.4)	15.9 (6.6)
Post-Intervention	13.4 (5.1)	13.9 (6.7)	13.7 (6.1)
NSNE Belief Score			
Pre-Intervention	17.7 (7.2)	14.8 (6.7)	16.0 (6.9)
Post-Intervention	15.3 (8.0)	12.3 (5.2)	13.5 (6.5)
LSE Frequency Score			
Pre-Intervention	3.6 (2.0)	3.2 (2.2)	3.4 (2.1)
Post-Intervention	4.0 (2.4)	3.5 (2.5)	3.7 (2.4)
LSE Belief Score			
Pre-Intervention	4.1 (2.3)	3.4 (2.0)	3.7 (2.1)
Post-Intervention	3.8 (2.6)	3.1 (1.7)	3.4 (2.1)
Helplessness Frequency Score			
Pre-Intervention	3.8 (2.0)	3.9 (2.1)	3.9 (2.0)
Post-Intervention	3.6 (2.4)	3.9 (2.0)	3.8 (2.1)
Helplessness Belief Score			
Pre-Intervention	4.4 (2.1)	3.9 (2.4)	4.1 (2.3)
Post-Intervention	2.8 (1.3)	3.4 (1.5)	3.2 (1.4)

Note: Min - max scores for the measures: ATQ = 30-150; PMDC = 5-25; NSNE = 7-35; LSE = 2-10; Helplessness = 2-10

Table 2. shows the descriptive statistics for the group pre-and post-intervention ATQ measures. As can be seen, except for the Low Self-Esteem frequency mean, all post-intervention total mean scores were lower than the pre-intervention means suggesting participants generally experienced fewer negative thoughts and had believed less in the thoughts. The pattern of results was similar for the adults with ASD and carers with the exception of the carer means for the frequency of Helplessness thoughts, which did not change from pre- to post-intervention whereas a mean decline was present for the adults with ASD.

Repeated Measure Analyses of Variance (ANOVA) were conducted using assessment time as the within-subject factor and participant type (i.e., adult with ASD or carer) as the between-subjects factor to examine changes in the ATQ mean scores over the two measurement times and to investigate differences associated with the two participant types. Results of these analyses are shown in Table 3.

Table 3. Repeated Measure ANOVAs comparing means for pre- and post-intervention ATQ measures (significant results in bold).

ATQ Measure	Repeated Measure ANOVA results
Total ATQ Score	
Frequency	F(1,31) = 13.03, p=.001, $\eta_p^2=.30$
Belief	F(1,32) = 18.89, p<.001, $\eta_p^2=.37$
PMDC Score	
Frequency	F(1,32) = 0.68, p=.417, $\eta_p^2=.02$
Belief	F(1,32) = 6.34, p=.017, $\eta_p^2=.17$
NSNE Score	
Frequency	F(1,31) = 15.19, p<.001, $\eta_p^2=.33$
Belief	F(1,33) = 8.77, p=.006, $\eta_p^2=.21$
LSE Score	
Frequency	F(1,32) = 0.91, p=.348, $\eta_p^2=.03$
Belief	F(1,33) = 0.41, p=.525, $\eta_p^2=.01$
Helplessness Score	
Frequency	F(1,32) = 0.16, p=.688, $\eta_p^2=.01$
Belief	F(1,3) = 9.27, p=.005, $\eta_p^2=.22$

As can be seen in Table 3. significant mean improvements from pre- to post-intervention were present for six of the ten measures. In particular the ANOVA results showed:

- Significantly lower post-intervention means with respect to both the frequency of negative thoughts and believe in these thoughts overall (i.e., the ATQ Total) and for items associated with Negative Self-Concepts and Negative Expectations;
- Significantly lower post-intervention means with respect to belief in the negative thoughts associated with Personal Maladjustment and Desire for Change and Helplessness; and

¹ The actual number of participants varied from 35 for some ATQ mean scores due to missing data on individual items.

- No significant mean differences for either of the Low Self-Esteem measures or the frequency of negative thoughts associated with Personal Maladjustment and Desire for Change and Helplessness.

program has also increased positive thoughts and feelings associated with personal adjustment, desire for change, self-concept, self-esteem, and personal empowerment.

With regard to differences in findings for the two participant types involved in the ACT groups, only one significant *time x participant* interaction was obtained and this involved the Negative Self-Concepts and Negative Expectations frequency score [$F(1,31) = 5.18, p = .030, \eta_p^2 = .14$], with the adults with ASD group showing a more marked decrease in the frequency of negative thoughts associated with this factor than did carer group.

Conclusions and Recommendations

The comparison of pre- and post-intervention ATQ mean scores from the sample of participants who completed both measures provide support for the effectiveness of the ACT group program run at Autism SA. Whilst not all participants improved on the ATQ measures, significant group mean reductions were present in the frequency of negative thoughts overall, and in particular with items associated with negative self-concepts and negative expectations (e.g., “I’m no good”, “I’m a loser”, “My future is bleak”). Importantly, significantly less belief in the negative thoughts was evident with mean declines in the overall ATQ score, and particularly with items associated with negative self-concepts and negative expectations, personal maladjustment and desire for change (e.g., “I’m so disappointed in myself”, “What’s the matter with me?”, “I wish I were a better person”) and helplessness (e.g., “It’s just not worth it”, “I can’t finish anything”). While no significant changes were evident in belief associated in items related to low self-esteem, the mean scores did nonetheless decline; however, this decline was not obtained for the frequency mean scores for either adults with ASD or carers.

This evaluation was conducted using pre- and post-intervention ATQ measures collected by the program facilitator from a sample of participants over a six-year period. No qualitative information was available for this evaluation; as such, it is not possible to comment on the effectiveness of particular components of the program. Should further evaluations be undertaken of this program it is recommended that qualitative questions also be incorporated that ask participants to comment on their experiences in order to provide information that may assist with refining program content over time (e.g., what was the most valuable aspect of the program for you, what worked well in the group, what could be changed or improved, any other suggestions for inclusion).

The evaluation findings reported here involve post-intervention ATQ measures that were collected at the completion of the program. In order to fully evaluate the effectiveness of the program, it is recommended that a longer-term follow-up also be considered (e.g., three months after program completion) to understand the extent that gains from the program have been maintained over time.

The aim of the program has been to provide skills in how to deal with difficult thoughts and feelings and it has been evaluated by the reduction in frequency of, and belief in, negative thoughts. Some consideration might be given in future assessments, both quantitative and qualitative, to whether the

Appendix A: Automatic Thoughts Questionnaire (ATQ)

Name: _____

Date _____

Instructions: Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you *over the last week*.

Please circle a response on the LEFT side of the sheet using the **FREQUENCY** scale:

1 = not at all 2 = sometimes 3 = moderately often 4 = often 5 = all the time

Then, please indicate how strongly, if at all, you tend to believe that thought, when it occurs. Please circle a response on the RIGHT side of the sheet using the **DEGREE OF BELIEF** scale:

1 = not at all 2 = somewhat 3 = moderately 4 = very much 5 = totally

Frequency	Item	Degree of Belief
1 2 3 4 5	1.) I feel like I'm up against the world.	1 2 3 4 5
1 2 3 4 5	2.) I'm no good.	1 2 3 4 5
1 2 3 4 5	3.) Why can't I ever succeed?	1 2 3 4 5
1 2 3 4 5	4.) No one understands me.	1 2 3 4 5
1 2 3 4 5	5.) I've let people down.	1 2 3 4 5
1 2 3 4 5	6.) I don't think I can go on.	1 2 3 4 5
1 2 3 4 5	7.) I wish I were a better person.	1 2 3 4 5
1 2 3 4 5	8.) I'm so weak.	1 2 3 4 5
1 2 3 4 5	9.) My life's not going the way I want it to.	1 2 3 4 5
1 2 3 4 5	10.) I'm so disappointed in myself.	1 2 3 4 5
1 2 3 4 5	11.) Nothing feels good anymore.	1 2 3 4 5
1 2 3 4 5	12.) I can't stand this anymore.	1 2 3 4 5
1 2 3 4 5	13.) I can't get started.	1 2 3 4 5
1 2 3 4 5	14.) What's wrong with me?	1 2 3 4 5
1 2 3 4 5	15.) I wish I were somewhere else.	1 2 3 4 5
1 2 3 4 5	16.) I can't get things together.	1 2 3 4 5
1 2 3 4 5	17.) I hate myself.	1 2 3 4 5
1 2 3 4 5	18.) I'm worthless.	1 2 3 4 5
1 2 3 4 5	19.) Wish I could just disappear.	1 2 3 4 5
1 2 3 4 5	20.) What's the matter with me?	1 2 3 4 5
1 2 3 4 5	21.) I'm a loser.	1 2 3 4 5
1 2 3 4 5	22.) My life is a mess.	1 2 3 4 5
1 2 3 4 5	23.) I'm a failure.	1 2 3 4 5
1 2 3 4 5	24.) I'll never make it.	1 2 3 4 5
1 2 3 4 5	25.) I feel so hopeless.	1 2 3 4 5
1 2 3 4 5	26.) Something has to change.	1 2 3 4 5
1 2 3 4 5	27.) There must be something wrong with me.	1 2 3 4 5
1 2 3 4 5	28.) My future is bleak.	1 2 3 4 5
1 2 3 4 5	29.) It's just not worth it.	1 2 3 4 5
1 2 3 4 5	30.) I can't finish anything.	1 2 3 4 5

ATQ Properties

Scoring: A 5-point Likert scale is used for rating the ATQ:

- 1) Frequency of occurrence of the negative thought: 1 = not at all, 2 = sometimes, 3 = moderately often, 4 = often, and 5 = all the time. Higher scores indicating high levels of negative thoughts.
- 2) Belief in the negative thought: 1 = not at all, 2 = somewhat, 3 = moderately, 4 = very much, and 5 = totally. Higher scores indicating greater belief in the negative thoughts.

The total score is calculated by summing all 30 items (min score = 30, max score = 150). The four factor scores are obtained as follows: personal maladjustment and desire for change (PMDC), negative self-concepts and negative expectations (NSNE), low self-esteem (LSE), and helplessness

- 1) Personal Maladjustment and Desire for Change (PMDC): sum of items 7, 10, 14, 20, and 26;
- 2) Negative Self-Concepts and Negative Expectations (NSNE): sum of items 2, 3, 9, 21, 23, 24, and 28;
- 3) Low Self-Esteem (LSE): sum of items 17 and 18;
- 4) Helplessness: sum of items 29 and 30.

Psychometric Properties (Hollon & Kendall, 1980)

Norms: The ATQ was normed using a sample of 312 undergraduate college student (145 females, 167 males). The mean age of this sample was 20.22 years ($SD=4.34$). Students in the sample were classified as either being depressed ($n=156$) or nondepressed ($n=156$) based on scores obtained on the Minnesota Multiphasic Personality Inventory (MMPI) Depression scale and the Beck Depression Inventory (BDI). Average scores for the samples were: nondepressed sample = 48.57 ($SD=10.89$) and depressed sample 79.64 ($SD=22.29$).

Reliability: The ATQ is described as having excellent internal consistency with split-half reliability coefficient of .97, $p < .001$ and an alpha coefficient of .96, $p < .001$. No test-retest reliability information is available.

Validity: The 30 items in the ATQ were selected from an original pool of 100 items, with these 30 items all significantly discriminating between nondepressed and depressed participants with no significant effect of sex. Concurrent validity has been established by significant correlations with the MMPI Depression scale and the BDI.

References

Hollon, S. D., & Kendall, P. C. (1980). Cognitive Self-Statements in Depression: Development of an Automatic Thoughts Questionnaire *Cognitive Therapy and Research*, 4(4), 383-395.