

Effectiveness of Acceptance and Commitment Therapy (ACT) on Alleviating Depression Symptoms: A Longitudinal-Naturalistic Study

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Abstract. Acceptance and commitment therapy (ACT) is recognized as a transdiagnostic and one of the effective therapeutic intervention approaches for depression in young adults and university students with a proven extended significant benefit. ACT's core goals are to be psychologically flexible and less prone to depression. However, although numerous studies demonstrated ACT's effectiveness, it is necessary to address the gap in determining whether the efficacy is consistent with previous research that mostly applied randomized controlled trials (RCTs). This study utilized a rare approach in navigating its efficiency among an underrepresented sample of Filipino students in a local university. This research applied a longitudinal-naturalistic single-group design within a two-month interval between baseline and post-intervention data among 124 participants. Relevant data were gathered using the Quick Inventory for Depressive Symptomatology – Self-Rated Version (QIDS-SR) in evaluating depressive levels and symptomatology and the Multidimensional Psychological Flexibility Inventory (MPFI) for identifying psychological flexibility and inflexibility. The results demonstrated significant changes with a p-value of 0.000 and an effect size d of .85. More so, it can be surmised that the value of $F(2, 121) = 33.80$ with a p-value less than 0.05 significantly impacted depression. Hence, ACT psychoeducation group intervention through a synchronous online platform alleviated the depression symptoms among students in a local university. Also, data proved that psychological flexibility and inflexibility have a significant impact on depression. Thus, the potential utilization and inclusion of psychoeducation based on ACT in the course and counseling program among college students is highly suggested.

Keywords: Acceptance and commitment therapy; Depression; Psychological flexibility and inflexibility; Longitudinal-naturalistic study; Filipino.

1.0 Introduction

Living in the global pandemic brought on by COVID-19, people are pushed to live as if they were in the movie “Hunger Games,” where the fittest survive. According to the World Health Organization ([WHO], 2022), the pandemic is one of the public health emergencies that profoundly impacts the mental health of people around the globe. There is a high prevalence of mental health conditions, and about one in every eight people worldwide has a mental disorder across all countries (WHO, 2022). Hence, there is a crisis due to the increasing mental health-related issues worldwide that consequently demands effective intervention.

People suffering from any mental health-related conditions may find Acceptance and Commitment Therapy (ACT) as their holy grail amidst psychological entrapment (Strange, 2021). ACT employs numerous psychotherapeutic techniques to alleviate people's dilemmas and promote their well-being, including acceptance of experience, cognitive diffusion, flexible attention to the present moment, contact with transcendent or perspective-taking a sense of self or self-as-context, clarity of values, and fostering commitment to values-based living. ACT is an evidence-based contextual cognitive behavioral intervention designed to create greater psychological flexibility (Louma et al., 2017).

More so, Strosahl and Robinson (2017) stated that ACT has proven to be a promising therapy for depression in both adolescents and adults, and it seems to give long-lasting benefits even after treatment has stopped. ACT is about alleviating psychopathology and living well (Louma et al., 2017). It can help a person suffering from depression, anxiety, and other mental health conditions (Fletcher, 2022), and according to Valdez (2022), depression is among the most common conditions in which ACT was found to be effective. Similarly, a systematic review by Coto-Lesmes et al. (2020) analyzed that those patients who received interventions based on Acceptance and Commitment Therapy showed a better emotional state and greater psychological flexibility than patients without treatment. Also, ACT's psychological flexibility is essential in decreasing depressive symptomatology on both clinician-rated and self-report measures (Ostergaard, 2020). Likewise, results showed that ACT's psychological flexibility mediated the relationship between fatigue severity and rest/sleep on depression among staff nurses (Yao et al., 2023).

Furthermore, according to Kroska et al. (2020), "this transdiagnostic intervention that aims to develop psychological flexibility may be useful as the impact of the pandemic continues to unfold." This therapy enhanced university students' psychological flexibility, mental health, and school engagement (Gregoire et al., 2018). In addition, Levin et al. (2020) suggested that ACT can be delivered online to improve college students' mental health. During the period of the COVID-19 pandemic, it has been reported that higher psychological inflexibility was associated with higher perceived stress, loneliness, and depression among college students (Radyani et al., 2022). Depression is a common mental health problem, affecting over 300 million people across the globe. It has been ranked as the leading contributor to global disability and a significant contributor to suicide, with an account of 1 per 100 deaths globally (WHO, 2017; 2022).

In a recent study conducted by Abalajen et al. (2022) among Psychology majors at Taguig City University, they found that 57.15 percent of their male respondents have moderately to highly elevated depression, while there were 52.10 percent of their female counterparts. Similarly, a study conducted by Clemente et al. (2019) shows that most of their respondents fell under the category of moderate depression, while some showed high to very high depression levels. Regardless of depression prevalence, it can be traced that afflicted college students are less likely to receive treatment (Arbona et al., 2017). However, despite numerous studies conducted that proved ACT's efficacy on depression (Bai et al., 2020; Hallis et al., 2016; Heydari et al., 2018; Ma et al., 2023; Mahnaz et al., 2018; Pots et al., 2016; Towsyfyhan et al., 2017; Twohig et al.; M., 2017) among college students (Abdul-Aziz et al., 2020; Kato et al., 2016; Levin et al., 2020; Radyani et al., 2021; Rasanen et al., 2016; Simon et al., 2018; Wang et al., 2023) in a group setting (Kyllonen, et al., 2018; Mahnaz, K. & Asghar, A., 2018; Ostergaard et al., 2020; Toghiani et al., 2019) delivered via web-based or online intervention (Lappalainen et al., 2015; Levin et al., 2020; Mahnaz et al., 2018; Pots et al., 2016; Rasanen et al., 2016) yet, most of these papers utilized randomized clinical trials or RCTs.

Consequently, there is a need to bridge the gap in gauging whether the efficiency of ACT is consistent with the previous research using a different approach in navigating the effectiveness through a longitudinal naturalistic design in identifying significant changes, impacts, and effects of ACT on depression and its symptoms within two-month intervals among underrepresented sample, Filipino students in a local university. Specifically, this study mainly purported to explore ACT's effectiveness in alleviating depression symptoms among college students taking B.S. Psychology degrees. Moreover, it aimed to determine whether there are differences in depression, its levels, and symptoms, as well as participants' psychological flexibility and inflexibility before and after intervention. Lastly, it sought to evaluate whether psychological flexibility and psychological inflexibility have an impact on depression among the participants.

2.0 Methodology

2.1 Research Design

The researcher used a longitudinal naturalistic single-group research design with a two-month interval. This design is an observational and correlational study involving consistent monitoring and repeated population assessment over an extended period. It allows the researcher to identify stability, developments, or changes among its subjects over time. A longitudinal study is an alternative to an experimental research design that enables researchers to uncover cause-and-effect relationships (Simkus, 2023). The researcher chose this design because relatively few studies examine the effect of Acceptance and Commitment Therapy in a naturalistic setting compared with the number of studies conducted using randomized clinical trials (RCT). Using this design helped to determine the effectiveness of ACT in alleviating depression symptoms and to compare whether the progress among the participants is significant at a given time two-month interval.

2.2 Research Locale

This study was held at Taguig City University in Taguig City, Philippines. The therapeutic sessions were held synchronously via the Google Meet application. The instruments or tools were also shared online via Google Forms.

2.3 Research Participants

Out of 485 invited participants, there were 204 who took the pretest, whereas there were only 132 who took the post-test. Consequently, after thorough deliberation, only 124 participants, of which 113 were females, and 11 were males, were included in the final list who participated in the intervention sessions and completed the research questionnaires from baseline to two (2) months later. These participants were aged 19 to 34, with an average age of 21. The researcher purposively selected the participants based on the following satisfied set of inclusion criteria at the time of the study: (1) they should give full consent to participating in the study; (2) they should be officially enrolled in the A.Y. 2022-2023; (3) they were taking Bachelor of Science in Psychology program in Taguig City University; (4) they were in their sophomore, junior, and senior year; (5) they should be 18 years old and above. Conversely, the researcher also identified some exclusion criteria such as (1) not recently diagnosed having any mental health disorder; (2) not undergoing any psychological treatment at the time of the study; (3) not taking any prescription for mental health-related illness such as anti-depressant, anti-psychotic drugs, and the like; and (4) none of the participants aged 17 years and below; The participants were recruited via posting an invitation using Google Forms link on their official group messenger accounts. Recruitment started after the researcher had secured approval from the Institutional Ethics Review Board, College Dean, and Program Head. The invitations posted were not limited to those who were experiencing depressive symptoms but instead allowed those who were eager to learn life skills based on ACT intervention techniques as well. Participation in this study was voluntary; hence, the participant had the right to withdraw at any time. In this regard, the withdrawal criteria were as follows: (1) voluntary withdrawal of the participants; (2) non-completion of the therapeutic sessions; (3) non-compliance or non-submission of the required data (incomplete or lack data submitted such as either no pretest or post-test) and; (4) inactive participation such non-submission or non-compliance with the intervention program activities given by the researcher-facilitator both during within-session and take home activities; and (6) incomplete or lack data submitted such as either no pretest or post-test.

2.4 Research Instrument

The depressive symptoms of the participants were measured using the Quick Inventory of Depressive Symptomatology Self-Rating (QIDS SR-16) by Rush, A. J. et al. (2003). The scale was created predominantly to assess depression severity and can be used as a screening test for depression. It is composed of 16 items investigating nine domains with a 4-point Likert-type scale ranging from 0-3, and the total score may vary from 0-27. A score of 16 to 20 may indicate severe depression and a score of 21 and above signifies very severe depression. It has a high internal consistency measure with Cronbach alpha of 0.86 scores, which are highly correlated with IDS-SR and HAM-D with *r* values of .96 and .86, respectively. In addition, the process measure of ACT was evaluated using the Multidimensional Psychological Flexibility Inventory or MPFI created by Rolffs, J.L. et al. (2016) was utilized. It is a 60-item measure to assess the six dimensions of psychological inflexibility and psychological flexibility. It has 12 subscales and two global composites measuring inflexibility and flexibility. MPFI has a 6-point Likert scale ranging from "never true" to "always true." All its subscales demonstrated high

levels of internal consistency with Cronbach's alphas ranging from .84 to .96, while the two composites, flexibility, and inflexibility, have $\alpha=.83$ and .84, respectively.

2.5 Data Gathering Procedure

The researcher followed the following procedures: (1) Securing Letter of Approval. The researcher received approval from the CEU Institutional Ethics Review Board (IERB), the Program Head of the Psychology department, and the College Dean of the College of Arts & Sciences, Taguig City University, to conduct this longitudinal study (2) Recruiting participants. The researcher then started recruiting participants via their official group messenger accounts; (3) Screening participants. There was a screening of the participants' eligibility satisfying both the set of inclusion and exclusion criteria as stated in the selection of the participants; (4) Confirming participants. Participants who were permitted by submitting a fully signed informed consent to participate in the study were confirmed before gathering the baseline data; (5) Pretesting. Pretesting was administered using outcomes and process measures. These are the Multidimensional Psychological Flexibility Inventory (MPFI) and the Self-Report Quick Inventory of Depressive Symptomatology (QIDS-SR₁₆); (6) Facilitating intervention program. The researcher facilitated a three-session ACT psychoeducation intervention program for all participants via Google Meet by adopting and modifying the various intervention techniques or activities. The therapeutic sessions had an estimated 90-140-minute time allocation per session.

The researcher facilitated one session per week for three consecutive weeks: (7) Monitoring. The researcher monitored the active participation of the participants and withdrawal from the study. Since the intervention sessions were held via an online platform, the researcher monitored the participation by requiring the participants to submit activities, both on-session and take-home activities, through the Google Classroom account to ensure that the participants had a full engagement in the 3 intervention sessions; (8) Post-testing. After two months, post-testing was given using the same research instruments during the pretesting via Google Forms; (9) Filtering responses. The researcher filtered all the participants' responses and eliminated those participants with missing variables or items, non-compliance with the required data, non-completion of the three-session intervention, and non-compliance with within-session and take-home activities; (10) Drawing out samples. The researcher used purposive sampling, specifically, homogenous sampling techniques in drawing samples out of all participants; lastly, (11) Analyzing data. The researcher then proceeded to data analysis.

2.6 Ethical Considerations

Participation in this research was voluntary and could be withdrawn at any time. The participants were well informed of the research's nature, process, and duration. They were of legal age and capable of giving consent, which was a primary requirement for their participation. Hence, there were no participants under 18 years of age. There were no anticipated risks or adverse effects from participating in this study. On the other hand, involvement in this research could help develop some life skills, techniques, and coping strategies when encountering inevitable stressors. There were learning sessions or psychoeducational activities which provided additional information and knowledge. The 3-sessions helped build psychological flexibility and be more optimistic and emotionally resilient, which were identified as some of the potential benefits. However, the researcher served as an investigator only and not as a mental health service provider. The researcher had no conflicts of interest to disclose. Moreover, engagement in this study as a volunteer involved no incentives or monetary compensation.

3.0 Results and Discussion

Table 1. Distribution of depression levels among participants on the baseline data and two (2) months after.

		Two (2) Months After (Post-Test)					Total	Percentage (%)
		Normal	Mild	Moderate	Severe	Very Severe		
Baseline Data (Pretest)	Normal	9	1	0	0	0	10	8.06%
	Mild	17	11	5	0	0	33	26.61%
	Moderate	2	23	13	3	0	41	33.06%
	Severe	4	9	14	5	0	32	25.81%
	Very Severe	0	1	3	2	2	8	6.45%
Total		32	45	35	10	2	124	100%
Percentage (%)		25.81%	36.29%	28.23%	8.06%	1.61%	100%	

The results presented in Table 1 showed that 41 or 33.06 percent got moderate levels of depression during the baseline testing; 23 out of 41 had improved symptom levels and became mild, and 2 became normal, while 3 got elevated symptoms after two months. More so, out of 32 or 25.81 percent of those with severe symptom levels, 27 improved; for those with mild symptom levels, 17 improved, exhibiting typical symptoms in the post-testing. Overall, 40 participants had the same symptom levels in pretesting and post-testing; 9 got elevated, while 75 participants, or 60.49 percent, showed improved symptom levels after two months. It can be observed that there were evident changes in depression levels among the participants. Hence, this indicates that there was a reduction in depression levels among the participants within two months of using ACT intervention. This result affirmed the finding in the study of Saedy et al. (2015) that short-term ACT is associated with a significant decrease in the level of depression. Also, the study by Kyllonen et al. (2018) concluded that 60 to 70 percent of participants who were depressed benefitted from the brief six-hour ACT therapeutic intervention facilitated by beginner therapists. Moreover, these results supported Zhao et al. (2023), who determined ACT's effectiveness in reducing depression symptoms among Chinese patients with a statistically significant difference.

Table 2. Comparison of the participants' depression in the baseline data (pretest) and two (2) months after (post-test)

Domains	Groupings	Mean	S.D.	t-value	p-value	Interpretation
Depression	Pre	12.5	4.86	9.51	P = 0.000 < 0.05	Significant
	Post	9.23	4.68			

It can be recognized (see Table 2) that the participants had a mean of 12.54 and a standard deviation of 4.863 in their pretest. After two months, the depression mean score was 9.23 with a standard deviation of 4.678 and a p-value of 0.000, less than the alpha level of 0.05. The finding connotes that there was a significant difference between the pretest and post-test data on depression. Therefore, psychoeducation ACT-based group intervention via online format minimized the participants' depression significantly within two months. This supports the research findings of Coto-Lesmes et al. (2020), who concluded that group-based ACT was proven to be beneficial in treating emotional disorders and found to have significant improvements in depression in the post-evaluation and the 2- to 18-month follow-up. Ahmadsaraei et al. (2017) found that psychotherapy such as ACT can reduce depression and the burden caused by physical illnesses and increase the quality of life. Similarly, the results also agreed with the study conducted by Heydari et al. (2018), and Karimi and Aghaei (2018) concluded that ACT could reduce or improve rates of depression, anxiety, and perceived stress.

Table 3. The difference between the participants' depression symptoms in the baseline data (pretest) and two (2) months after (post-test)

Domains	Groupings	Mean	S.D.	t-value	p-value	Interpretation
Sleep Disturbance	Pre	2.24	0.800	4.626	P = 0.000 < 0.05	Significant
	Post	1.90	0.840			
Sad Mood	Pre	1.58	0.797	6.133	P = 0.000 < 0.05	Significant
	Post	1.13	0.721			
Appetite/Weight	Pre	1.56	0.904	4.462	P = 0.000 < 0.05	Significant
	Post	1.17	0.890			
Concentration	Pre	1.33	0.718	4.022	P = 0.000 < 0.05	Significant
	Post	1.05	0.785			
Self-Criticism	Pre	1.29	1.201	5.959	P = 0.000 < 0.05	Significant
	Post	0.61	0.908			
Suicidal Ideation	Pre	0.73	0.849	4.726	P = 0.000 < 0.05	Significant
	Post	0.44	0.724			
Interest	Pre	1.08	0.861	2.977	P = 0 < 0.004	Significant
	Post	0.80	0.796			
Energy/Fatigue	Pre	1.40	0.873	3.479	P = 0.001 < 0.05	Significant
	Post	1.09	0.884			
Psychomotor Agitation/ Retardation	Pre	1.33	1.002	3.558	P = 0.001 < 0.05	Significant
	Post	1.04	0.974			

As shown in Table 3, it can be noted that symptoms such as sad mood, self-criticism, suicidal ideation, sleep disturbance, appetite, and concentration ($t = 6.133, 5.959, 4.726, 4.626, 4.462$, and 4.022) all have p-values of 0.000. Moreover, symptoms such as psychomotor agitation/retardation and energy/fatigue ($t = 3.558$ and 3.479) both got a p-value of 0.001. In contrast, interest symptoms ($t = 2.977$) had a p-value of 0.004 in which all were below the alpha level of 0.05. This implied that there were significant differences in the depression symptoms among the participants comparing the baseline data and two (2) months after. Hence, ACT intervention delivered via an online platform significantly lowered the depression symptoms among the participants. This result agreed with the findings of several research that the ACT intervention facilitated via web-based or mobile-based showed significant improvement in addressing depression symptoms (Lappalainen et al., 2014; Lappalainen et al., 2015;

Rasanen et al., 2016; Puolakanaho's et al., 2023). More so was consistent with the study by Kohtala (2018), which indicated that the four (4)- session ACT intervention significantly reduced depressive symptoms and improved the participants' overall well-being. Puolakanaho et al. (2023) suggested that a brief six to eight weeks of therapy program can elevate well-being and decrease depression.

Table 4. Difference in the psychological flexibility and its processes in the baseline data (pretest) and two (2) months after (post-test)

Domains	Groupings	Mean	S.D.	t-value	p-value	Interpretation
Acceptance	Pre	3.69	0.834	-5.199	P = 0.000 < 0.05	Significant
	Post	4.06	0.835			
Present Moment Awareness	Pre	3.87	0.955	-5.771	P = 0.000 < 0.05	Significant
	Post	4.38	0.896			
Self-As-Context	Pre	4.07	0.952	-5.597	P = 0.000 < 0.05	Significant
	Post	4.51	0.973			
Defusion	Pre	3.45	0.933	-2.974	P = 0.004 < 0.05	Significant
	Post	3.70	0.903			
Values	Pre	4.39	0.955	-2.500	P = 0.014 < 0.05	Significant
	Post	4.60	0.956			
Committed Action	Pre	4.24	1.000	-1.845	P = 0.067 > 0.05	Not Significant
	Post	4.39	0.985			
Flexibility	Pre	3.95	0.696	-6.422	P = 0.000 < 0.05	Significant
	Post	4.27	0.691			

As displayed in Table 4, results showed that the psychological flexibility ($t = -6.422$), along with its processes, such as present moment awareness, self-as-context, and acceptance ($t = -5.771$, -5.597 , and -5.199), got a p-value of 0.000 while defusion, and values ($t = -2.974$, and -2.500) had a p-value of 0.004 and 0.014 respectively. However, the committed action ($t = -1.845$) got a p-value of 0.067. Though there was a higher mean in the post-test ($M = 4.39$) than in the pretest ($M = 4.24$), the difference was insignificant since the p-value was more significant than the alpha level of 0.05. Overall, these entailed that the participants showed increased psychological flexibility. These findings have similar results to the dissertation conducted by Kohtala (2018), who concluded that short-term ACT intervention successfully increased psychological flexibility, satisfaction with life, social functioning, and self-confidence among people suffering from low mood and depressive symptoms.

Conversely, though there was an increase in the mean of Committed Action (from 4.24 to 4.39), it was insignificant. This was possibly due to several reasons, such as it requires persistence, the ability to change, sensitivity to the situations, connection to one's values and goals, and the ability to incorporate experiences, both good and bad, as part of the process of engagement (McCracken, 2013). Hence, it takes time to develop such a core process of psychological flexibility in committed action. Consequently, as per the intervention program, it was the last core process presented during the third and last session by the researcher-facilitator, and the participants only had more than a week before taking post-testing. Thus, a longer time interval may increase the committed action among participants, primarily since ACT is known to have a more prolonged maintenance effect (Bai et al., 2020).

Outcomes showed (see Table 5) that the psychological inflexibility ($t = 4.525$) and its core processes, such as self-as-content and fusion ($t = 4.321$ and 4.306), got a p-value of 0.000. In contrast, lack of contact with values ($t = 3.514$) had a p-value of 0.001, which implied a significant difference. However, the experiential avoidance ($t = .729$) with a p-value of 0.468, which was greater than the alpha level of 0.05, entailed no significant difference between the pre-and post-intervention. This can be explained, however, by the fact that although there was a decrease in experiential avoidance among participants, ACT focused more on the present than the past or future. Hence, it can be inferred that depression is dealing more with the past, and for people who have comorbidity with trauma, ACT may not be the most suitable therapeutic technique (Jensen, 2022). In general, participants showed a significant decrease in psychological inflexibility. This result matched the findings of Levin et al. (2014), who discussed that contextual cognitive behavioral therapies, including ACT, have been found to impact various clinical problems by reducing psychological inflexibility.

Table 5. Difference in the psychological inflexibility and its processes in the baseline data (pretest) and two (2) months after (post-test)

Domains	Groupings	Mean	S.D.	t-value	p-value	Interpretation
Experiential Avoidance	Pre	4.22	1.006	0.729	P = 0.468 > 0.05	Not Significant
	Post	4.15	1.098			
Lack Of Contact with the Present Moment	Pre	3.31	1.052	2.928	P = 0.004 < 0.05	Significant
	Post	3.03	1.057			
Self As Content	Pre	3.71	1.159	4.321	P = 0.000 < 0.05	Significant
	Post	3.28	1.178			
Fusion	Pre	3.62	1.218	4.306	P = 0.000 < 0.05	Significant
	Post	3.20	1.278			
Lack Of Contact with Values	Pre	3.05	1.139	3.514	P = 0.001 < 0.05	Significant
	Post	2.72	1.152			
Inaction	Pre	3.30	1.163	2.918	P = 0.004 < 0.05	Significant
	Post	3.00	1.205			
Inflexibility	Pre	3.53	0.827	4.525	P = 0.000 < 0.05	Significant
	Post	3.23	0.896			

The results revealed (see Table 6) that the regression model is exploring the impact of ACT's psychological flexibility and psychological inflexibility on depression among the participants. It can be inferred that $F(2, 121) = 33.80$ and a p-value of less than .001 indicated that psychological flexibility and psychological inflexibility have a significant impact on depression.

Table 6. ACT's psychological flexibility and psychological inflexibility on depression regression model

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	964.8	2	482.4	33.80	p = 0.001<0.05
Residual	1727	121	14.27		
Total	2692	123			

a. Dependent Variable: Depression

b. Predictors: (Constant), Psychological Inflexibility, Psychological Flexibility

In addition, as shown in Table 7, the results presented showed that the variance in the outcome variable with an R^2 value of .36, revealing that psychological flexibility and psychological inflexibility explained 36% of the variance in depression with a p-value of 0.000, was found to be significant.

Table 7. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.599 ^a	0.358	0.348	3.77780	0.358	33.801	2	121	p=0.000 < 0.05	1.891

a. Predictors: (Constant), Psychological Inflexibility, Psychological Flexibility

b. Dependent Variable: Depression

The findings (refer to Table 8) disclosed that psychological flexibility ($\beta = -0.24$, $p = 0.001$) and psychological inflexibility ($\beta = 0.51$, $p < 0.000$) significantly have an impact on depression among the participants. Thus, an improvement in psychological flexibility and a reduction in psychological inflexibility showed a decrease in depression and its symptoms. These findings agreed with the results of a multiple regression analysis study by

Abdul-Aziz et al. (2020), which concluded that the strongest predictor of depression is psychological inflexibility. Also, Masuda A. et al. (2014) concluded that an elevated psychological inflexibility was associated with higher depressive, somatic, and anxiety symptoms. More so, previous studies found that depression was inversely related to psychological flexibility (Yao et al., 2023; Abdul Aziz et al., 2020); lower psychological flexibility was highly associated with higher depression and stress symptoms among adolescents (Puolakanaho et al., 2023); while high psychological flexibility was related to low depression, anxiety, and stress among college students (Wang et al., 2023).

Table 8. Statistical significance of psychological flexibility and psychological inflexibility as predictors towards depression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7.640	2.635		2.899	0.004		
Psychological Flexibility	-0.330	0.100	-0.244	-3.316	p=0.001 < 0.05	0.979	1.021
Psychological Inflexibility	0.535	0.077	0.512	6.964	p=0.000 < 0.05	0.979	1.021

a. Dependent Variable: Depression

On the other hand, greater psychological inflexibility was strongly correlated with higher perceived stress, loneliness, and depression among college students during the pandemic (Radyani et al., 2021), linked with high levels of depressive symptoms and sleep difficulties among university students (Kato, 2016); and greater somatic, depressive, and anxiety symptoms (Masuda et al., 2014). There were also parallel results with the study conducted by Strange et al. (2017), who suggested that psychological flexibility may be attenuated in major depressive disorder and that psychological inflexibility was associated with greater severity in depression. Similarly, the findings of Padir et al. (2024) showed that the change in the level of psychological flexibility/inflexibility has a significant effect on psychological distress, such as depression, anxiety, and stress. In terms of the degree of relationship, the result of this study was consistent with the observed result of cross-sectional correlations with psychological inflexibility and symptomatology, in which correlations range between 0.31 and 0.61 (Hernández-López, 2021).

Table 9. Effect size of act intervention in alleviating depression and its symptoms with two months interval

Domain	Mean	S.D.	Sig.	Cohen's d	95% Confidence Interval	
					Lower	Upper
Depression	3.31	3.88	0.001	0.85	0.65	1.06
Sad	0.45	0.82	0.001	0.55	0.36	0.74
Self-Criticism	0.68	1.27	0.001	0.54	0.35	0.72
Suicidal	0.29	0.68	0.001	0.42	0.24	0.61
Sleep	0.34	0.82	0.001	0.42	0.23	0.6
Appetite	0.4	0.99	0.001	0.4	0.22	0.58
Concentration	0.28	0.78	0.001	0.36	0.18	0.54
Psychomotor Agitation	0.29	0.91	0.001	0.32	0.14	0.5
Fatigue	0.31	0.98	0.001	0.31	0.13	0.49
Interest	0.28	1.06	0.004	0.27	0.09	0.45

It can be noted that ACT intervention, with $d = 0.85$, is interpreted as a large effect size in the outcome variable. Hence, Acceptance and Commitment Therapy has been essentially effective in alleviating depression symptoms among the participants at two-month intervals. This result supports the study of Zhao et al. (2023), who stated that ACT notably improves depressive symptoms and psychological flexibility among Chinese participants. Similarly, a longitudinal study by Rutschmann et al. (2022) found a significant decrease in symptomatology with $d = 0.82$ to 0.99 , $p < 0.001$ among patients in a psychiatric hospital. Moreover, the intervention group was reported

to have higher psychological flexibility, well-being, and school engagement, while there was lower depression, anxiety, and stress among university students (Gregoire et al., 2018).

4.0 Conclusion

ACT-based therapeutic learning sessions for group intervention delivered via a synchronous online discussion using a longitudinal naturalistic design with two (2) month intervals significantly alleviating depression and its symptoms among students in a local university. Next, ACT's psychological flexibility and psychological inflexibility remarkably have an impact on depression among the participants. Hence, as the participant becomes more psychologically rigid, the more likely he or she is to be depressed or experience more symptoms of depression. Therefore, it is highly recommended that in this fast-paced, technological era, effective, transdiagnostic, and less time-consuming therapies are more relevant and practical. Thus, school psychologists and guidance counselors could utilize or include ACT intervention in their practices. Furthermore, faculty members could include certain ACT intervention activities in their course program or curriculum that would enhance students' well-being and academic performance.

5.0 Contributions of Authors

This research endeavor is the sole scholarly work of the author.

6.0 Funding

This study has no monetary grant by any funding agency.

7.0 Conflict of Interests

There is no conflict of interest to be disclosed by the researcher.

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