Evaluating Psychological Flexibility as a Core Mechanism in Act's Effectiveness for Addressing Depression and Anxiety Among University Students

***Dr. Suprithy Paliwal**
****Uma G**

Abstracts

The study investigates the possibility of treating college students with depression and anxiety through Acceptance and Commitment Therapy, using psychological flexibility. The data was taken from 180 university students in Bengaluru, using a structured survey distributed under quantitative and cross-sectional methodology on the aspects of psychological flexibility, acceptance, mindfulness, stress, anxiety, and depression. The study explored the demographics like gender, academic stream, social status, and place of residence as moderators to the relationship between psychological flexibility and mental health outcomes. Analysis was conducted both on descriptive and inferential statistics. From the findings of the research, it was shown that the role of psychological flexibility was significant regarding anxiety and depression, and the underlying primary moderators were found to be the effects of social status, gender, and academic stream. Dwelling location, however, had relatively few moderating effects. These results indicate the role of psychological flexibility in improving the mental health of students and encourage the use of ACT as an effective approach towards intervening against anxiety and depression, particularly when demographic differences are to be considered.

Keywords: *Acceptance and Commitment Therapy (ACT), Psychological Flexibility, ACT's Effectiveness, Depression and Anxiety, University Students.*

1. INTRODUCTION

When values, goals, and intended outcomes are concentrated, psychological flexibility includes the ability to adapt to changing events (Bhargava, & Sriram, 2023). Openness and acceptance of most internal experiences—thoughts, feelings, memories, and bodily sensations—that do not dictate behavior are also included (Bhatnagar, 2023). Psychological flexibility lets people respond to negative situations in ways that align with their beliefs and long-term goals rather than letting them overwhelm, control, or dominate them. This is the foundation of Acceptance and Commitment Therapy for resilience (Dutta, 2020). Becoming more adaptable to adverse experiences allows people to live more fully and appropriately despite life circumstances (Gopalakrishnan, 2020). Acceptance and commitment treatment is useful in many mental health issues and widely acknowledged (Srivastava, et al., 2023). ACT differed from cognitive-behavioral therapies because it changed the

relationship between thoughts, emotions, and physical sensations rather than changing the situation (Ona, 2020). ACT promotes psychological flexibility, allowing people to live more fully despite difficult interior situations. It works for anxiety, depression, stress, and trauma-related problems (Nemlekar, & Srivastava, 2020).

ACT is based on the idea that fighting or controlling internal experiences (thoughts, feelings, bodily sensations) may cause psychological anguish (Pal, et al., 2023). For many mental health patients, trying to control feelings like anxiety and despair can worsen their condition (Pandey, & Gupta, 2022). ACT encourages people to accept their emotions and thoughts so they may coexist without being dominated by them (Rockman, 2021). The transition from controlling to accepting is a key ACT assumption and is called psychological flexibility (Sriram, & Bhargava, 2022).

Several fundamental skills make up psychological flexibility:

1. **Being open to all emotions**- Even negative ones, without avoidance or repression (Varghese, & Sharma, 2021).
2. **Engaging in the present -** Developing mindfulness abilities to fully experience life, rather than dwelling on past or future events (Varughese, & Kallivayalil, 2020).
3. **Acting aligned with values -** Despite resistance, individuals are encouraged to pursue action-oriented, values-driven actions (Warrier, et al., 2021).

The ability to confront life's challenges with a less judgemental and more open attitude towards emotions improves adaptive coping (Yeminedi, 2023).

Bairagi et al. (2023) aimed to effectively regulate GAD in Indian youth, a design intervention was created to assist them in determining its causes. The set of tools created using a user-centric approach will serve as reminders for anxiety triggers, enabling proactive treatment for a person's symptoms and maybe self-monitoring <2. Such engagement tools and software are part of the intervention, which facilitates effective coping strategies, trigger identification, and lifestyle modifications. The study claims that only when culturally appropriate are these design-driven interventions beneficial management adjuncts. For younger populations who could experience stigma or have limited access to conventional mental health treatments, this research aims to address this issue by highlighting the significance of having culturally relevant mental health solutions (Bairagi, et al., 2023).

Dixit and Rajaura, (2023) suggested that social media use should be discussed in treatment by mental health professionals, particularly with their younger patients and clientele. This paper has examined in detail the relationship between social media use and mental health. According to their research, a number of articles discuss social media's advantages and disadvantages, including how it may help people connect and support one another as well as how it can be linked to loneliness, anxiety, and depression. The writers stress the need of maintaining equilibrium on social media and support instruction and training in responsible usage practices. The importance of social media's

potential for both positive and negative outcomes in connection building and pain management is highlighted by this study, which also encourages methods to counteract these negative impacts while maximising its beneficial ones (Dixit, & Rajaura, , 2023).

Razavi et al. (2023) described how deep learning and machine learning techniques are used to identify, forecast, and track stress and stress-related mental diseases. The benefits and drawbacks of utilising some of the models and techniques for data pre-processing that are currently being employed in research are discussed. Based on these findings, a positive trend regarding interest in using technology for mental health diagnosis and care delivery is depicted. The authors claim that these cutting-edge methods can help people enhance their coping mechanisms, offer prompt assistance, and offer customised mental health care. They also bring up certain ethical conundrums about consent and data privacy, as well as other difficulties that need more investigation to support such techniques (Razavi, et al., 2023).

Levin, et al. (2019) aimed to develop and validate the Acceptance and Action Questionnaire for University Students (AAQ-US), a test of psychological rigidity tailored to college students' special domain. Because the AAQ in its generic form is usually less sensitive to changes in campus-specific functioning, these alterations are a significant outcome of interest for this cohort. In an online poll, 425 first-year students took part. After conducting psychometric evaluations, a 12-item, one-factor scale was fine-tuned to ensure excellent internal consistency. Convergent validity was demonstrated by measures of academic performance, mental health, and psychological rigidity, which demonstrated moderate to substantial associations with the AAQ-US. Academic achievement was better predicted by the AAQ-US, despite a stronger correlation between the AAQ-II (a broad measure of psychological inflexibility) and mental health outcomes. Academic outcomes benefited more from the AAQ-US's incremental validity in predicting mental health outcomes after correcting for the AAQ-II, but the gains were still noticeable. Taken together, the results demonstrate that the AAQ-US is a valid and reliable measure of psychological rigidity among university students; it may be particularly relevant when thinking about academic achievement (Levin, 2019).

Howell, A. J., & Passmore, H. A. (2019) asserted that ACT, or Acceptance and Commitment Training, should be seen as a beneficial psychological intervention for improving well-being, and (b) provided evidence for this assertion by analysing data on the effects of ACT on college students' well-being. After reviewing the relevant literature, we identified five randomized trials that compared the impact of ACT interventions on college students' well-being to that of control groups. In the first piece of evidence supporting ACT's usefulness as a psychological intervention for college students, a meta-analysis revealed a tiny but statistically significant impact size on happiness (d = 0.29). We weigh the pros and cons of the current literature, discuss its ramifications, and look ahead to where this area of study could go from here. As a result, the authors believe that well-being scholarship may benefit by studying, theorizing, and implementing ACT in order to enhance well-being (Howell, 2019).

The following objectives and hypotheses were formulated

Objectives of the Study

- To study the impact of psychological flexibility on anxiety and depression in university students using Acceptance and Commitment Therapy (ACT).
- To determine how gender, academic stream, social position, and domicile effect the link between psychological flexibility and mental health outcomes (anxiety and depression).

Hypotheses

H_1: The association between psychological flexibility and anxiety is significantly moderated by gender (H_1a), stream (H_1b), social status (H_1c), and area of residence (H_1d).

H_2: The association between psychological flexibility and depression is significantly moderated by gender (H_2a), stream (H_2b), social status (H_2c), and area of residence (H_2d).

H_3: The association between acceptance and stress is significantly moderated by gender (H3a), stream (H_3b), socioeconomic position (H_3c), and area of residence (H_3d).

METHODOLOGY

Research Design

This study embraced a quantitative approach aimed at exploring how psychological flexibility can be used as an intervention to reduce anxiety and depression in university students with the help of Acceptance and Commitment Therapy. A cross-sectional design was utilized

Sample and Area of Research

Thereafter, a total of 180 university students from the universities in Bengaluru were part of the study. Equal males (50%) and females (50%) comprised the population. The sample was divided into 60 students each from Arts, Science, and Commerce streams. Lastly, the areas of residence of the students, such as urban and rural, and the social statuses of tribal and non-tribal, acted as moderators for the exercise to observe their effects on the efficacy of ACT.

Tools

Six components were operationalized using four survey scales: The Depression, Anxiety, Stress Scale-21, Multidimensional Scale for Perceived Mindfulness, Brief Acceptance Scale, and 15-Item Five Facet Psychological Flexibility Questionnaire.

Data Analysis

Direct and moderated relationships were analyzed with the aid of both descriptive and inferential statistics.

- **Descriptive Statistics:** Calculation of means and standard deviations to determine the central tendency and dispersions of variables.
- **Moderation Analysis:** It explored whether or not age, gender, academic stream, social status, and area of living acted as moderators for psychological flexibility's effect on anxiety and depression outcomes as well as on acceptance and stress levels.

Results and Discussion

The following table 1 shows the mean and standard deviation of each participant questionnaire.

Table 1: Research variable descriptive statistics

	Variables	Questionnaires	Rating Scale	Mean	Std. Deviation
1.	Psychological flexibility	The Five Facets of the 15-Item Psychological Flexibility Survey	5-point rating	4.21	2.29
2.	Acceptance	The Scale of Brief Acceptance	5-point rating	4.25	2.20
3.	Mindfulness	The Perceived Mindfulness Multidimensional Scale	7-point rating	6.05	3.02
4.	Stress	The Stress-Related Depression Anxiety Stress Scale-21	4-point rating	11.50	7.94
5.	Anxiety	The Anxiety and Depression Anxiety Stress Scale-21	4-point rating	11.50	8.58
6.	Depression	The Depression-Related Anxiety Stress Scale-21	4-point rating	10.85	8.12

Table 1 shows descriptive data for the research variables, questionnaires, and rating scales. The mean and standard deviation of each variable illustrate the responses' central tendency and variability. Psychological flexibility has a mean score of 4.21 and a standard deviation of 2.29 on the 15-item Five Facet Psychological Flexibility Questionnaire, which employs a 5-point grading system. The Brief Acceptance Scale measures acceptance with a mean score of 4.25 and a slightly lower standard deviation of 2.20. The Multidimensional Scale for Perceived Mindfulness (7-point rating scale) has a higher mean of 6.05 and standard deviation of 3.02. The Depression Anxiety Stress Scale-21 (4-point rating scale) measures stress, anxiety, and depression. Stress and anxiety have mean scores of 11.50 and standard deviations of 7.94 and 8.58. Depression has a mean of 10.85 and an SD of 8.12. These values reveal a variety of reaction patterns because mindfulness and psychological discomfort are more varied than acceptance and flexibility.

Inferential Statistics or Hypotheses Testing

The following table 2 demonstrate how gender, stream, SES, and residence affect the relationship between psychological flexibility and anxiety. In Table 2, the interaction term moderates the association between psychological flexibility and anxiety, $p = 0.005$, but gender does not have a direct effect on anxiety, $p = 0.919$. Hypothesis H_1a that psychological flexibility affects anxiety differently depending on gender is accepted. A significant interaction effect for psychological flexibility by anxiety is reported at $p = 0.040$, but had no direct influence on anxiety at $p = 0.459$.

Table 2: Moderation Analysis Results (Psychological Flexibility as Independent Variable, Various Moderators: Gender, Stream, Social Status, Area of Living)

Moderator Variable	Variables	Beta	t-value	Significant
Gender (H_1a)	Psychological Flexibility	0.355	2.471	0.015
	Gender	-0.029	-0.104	0.919
	Psychological Flexibility × Gender (Interaction)	-0.026	-0.085	0.005
Stream (H_1b)	Psychological Flexibility	0.234	3.138	0.035
	Stream	-0.193	-1.746	0.459
	Psychological Flexibility × Stream (Interaction)	0.308	2.111	0.040
Social Status (H_1c)	Psychological Flexibility	0.407	3.666	0.009
	Social Status	0.146	0.564	0.576
	Psychological Flexibility × Social Status (Interaction)	-0.140	-0.456	0.006
Area of Living (H_1d)	Psychological Flexibility	0.112	1.657	0.514
	Area of Living	-0.334	-2.235	0.219
	Psychological Flexibility × Area of Living (Interaction)	0.444	2.461	0.146

This also supports H_1b that psychological flexibility influences anxiety by study stream. The interaction term of psychological flexibility and social status moderate's anxiety (p = 0.006). Hence, the impact of psychological flexibility on anxiety varies between classes, supporting hypothesis H_1c. Lastly, Table 3 stipulates that psychological flexibility (p = 0.514) and area of living (p = 0.219) do not exert direct influence on anxiety. This interaction term, psychological flexibility-area of living, approaches significance at p = 0.146 and doesn't support the moderating hypothesis. Hypothesis H_1d fails, and residence is not significantly influencing psychological flexibility and anxiety.

Table 2 reflects the moderation of gender, stream, socioeconomic position and area of living on the psychological flexibility-depression relationship. Psychological flexibility reduced depression enormously to the size of 0.536, p = 0.000 but gender was not having any moderating effect in that relationship as such Beta = - 0.402, p = 0.174, thus indicating that gender adds nothing to the effect of psychological flexibility on depression. Stream did not have a direct influence on depression; however, it did influence the relationship between psychological flexibility and depression, and this was by showing a minor moderating effect (Beta = 0.492, p = 0.077). Social status did not alter the

strength of the association between psychological flexibility and depression either, with a Beta = 0.331 and p-value = 0.280.

Table 3: Moderation Analysis of Depression, Psychological Flexibility, and Moderators (Gender, Stream, Social Status, Area of Living)

Moderator Variable	Variables	Beta	t-value	Significant
Gender (H_2a)	Psychological Flexibility	0.536	4.762	0.000
	Gender	0.299	2.137	0.258
	Psychological Flexibility X Gender (Interaction)	-0.402	-2.366	0.174
Stream (H_2b)	Psychological Flexibility	0.179	2.638	0.104
	Stream	-0.471	-2.832	0.069
	Psychological Flexibility X Stream (Interaction)	0.492	2.772	0.077
Social Status (H_2c)	Psychological Flexibility	0.196	2.281	0.203
	Social Status	-0.262	-1.019	0.311
	Psychological Flexibility X Social Status (Interaction)	0.331	2.085	0.280
Area of Living (H_2d)	Psychological Flexibility	0.172	2.020	0.310
	Area of Living	-0.225	-1.835	0.406
	Psychological Flexibility X Area of Living (Interaction)	0.353	2.164	0.247

The area of living did not have a significant moderating effect on the relationship between psychological flexibility and depression (Beta = 0.353, p = 0.247) or a direct effect on depression (Beta = -0.225, p = 0.406). These table 3 findings suggest that psychological flexibility has a significant effect on depression, while neither gender nor stream nor socioeconomic position nor area of living showed a significant moderating effect on this relationship. Therefore, all the hypotheses, H_2a, H_2b, H_2c, H_2d are not supported and it is found that the demographic factors as well as situational factors do not have much impact on psychological flexibility and depression.

As can be seen in Table 3, the impact of acceptance (independent variable) on stress (dependent variable) is mediated by gender, stream, social position, and location of residence. A negative beta here indicates that stress varies between genders: Beta = -0.563, t-value = -3.245, p = 0.026. The interaction between acceptance and gender is marginal (Beta = 0.550, t-value = 2.892, p = 0.061), suggesting that gender might have moderated the relationship between acceptance and stress. Again, the interaction is marginal and the p-value close to 0.05, so the hypothesis is not supported either.

Table 4: Moderation Analysis Results (Acceptance as Independent Variable, Stress as Dependent Variable, Various Moderators)

Moderator Variable	Variables	Beta	t-value	Significant
Gender (H_3a)	Acceptance	0.020	1.126	0.902
	Gender	-0.563	-3.245	0.026
	Acceptance X Gender (Interaction)	0.550	2.892	0.061
Stream (H_3b)	Acceptance	-0.041	-1.341	0.736
	Stream	0.810	-3.856	0.006
	Acceptance X Stream (Interaction)	0.935	4.074	0.003
Social Status (H_3c)	Acceptance	0.507	3.884	0.005
	Social Status	0.333	2.276	0.204
	Acceptance X Social Status (Interaction)	-0.418	-2.323	0.008
Area of Living (H_3d)	Acceptance	0.405	3.251	0.026
	Area of Living	0.270	2.023	0.309
	Acceptance X Area of Living (Interaction)	-0.214	-1.688	0.494

Students across different streams (Arts, Science, and Commerce) have reported various levels of stress with the differential stream considered. There is also evidence that academic stream is a moderator of the acceptance-stress relation with a Beta value of 0.935 (t-value = 4.074, p = 0.003). Table 4 supports hypothesis H_3b as acceptance varies stress differentially across streams. Regarding the interaction term of acceptance and social status, beta = -0.418, t-value = -2.323, p = 0.008, it reveals that social status acts as a moderator between acceptance and stress. With regard to hypothesis H_3c, social status moderates the stress effect of acceptance. The location of residence did not impact stress (Beta = 0.270, t-value = 2.023, p = 0.309) nor moderates the relationship of acceptance to stress (Beta = -0.214, t-value = -1.688, p = 0.494). Lack of interaction means that location of residence does not in any way affect acceptance at influencing stress, hence disconfirming hypothesis H_3d. In general, gender, stream, and social class affect how acceptance impacts on stress, but location of residence does not.

CONCLUSION

The findings of this study represent much importance, in highlighting how the relevance of psychological flexibility reduces anxiety and depression among college students, especially in using the Acceptance and Commitment Therapy paradigm. The study goes on further to emphasize a clearer link than is found between greater psychological flexibility, acceptance, and mindfulness and improved mental health outcomes, especially concerning the lowering of anxiety and depressive symptoms. The findings suggest that these psychological processes play a core role in ensuring that students are emotionally resilient and at a healthy psychological state. However, the moderation analysis showed that demographic factors such as social position, gender, and stream of study affected the relationship between psychological flexibility and anxiety significantly. Interestingly, no such moderating impact was found for depression, indicating that psychological flexibility may have a more nuanced and situation-specific impact on anxiety. This concludes the study's conclusion, in which it states that psychological flexibility, although being a useful tool for lowering anxiety and depression, should be tailored according to the specific needs and traits of various student populations for the attainment of better mental health interventions in therapeutic settings.

***Associate Professor & HOD**
Department of Psychology
S.S. Jain Subodh PG College Jaipur (Raj.)
****Professor**
Department of Psychology
Garden City University, Bengaluru

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