




The Relationship Among Mindfulness, Acceptance, and Academic Procrastination in Students

Zahra Salehzadeh Einabad ^{1,*}, Fariba Jafari Roshan², Rasol Roshan¹ and Mahdi Ghasemzadeh²

¹Clinical Psychology Department, Faculty of Human Sciences, Shahed University, Tehran, Iran

²Clinical Psychology Department, Faculty of Clinical Psychology, Allameh Tabatabaee University, Tehran, Iran

*Corresponding author: PhD Student, Clinical Psychology, Clinical Psychology Department, Faculty of Human Sciences, Shahed University, Tehran, Iran. Email: z_salehzade@yahoo.com

Received 2018 March 09; Revised 2019 February 07; Accepted 2019 June 02.

Abstract

Procrastination is considered as an avoidance by which students get rid of negative experiences such as anxiety, however, underlying mechanisms in this relationship are not fully known. While mindfulness and acceptance are correlated with procrastination and anxiety, to date, the role of mindfulness and acceptance in procrastination have not been fully studied. This study aims at investigating whether mindfulness and acceptance can increase the prediction of academic procrastination over and beyond trait anxiety. The statistical community was Shahed University. A total of 111 students were selected through cluster sampling method. They were assessed on different variables, including mindfulness (KIMS), acceptance (AAQ-II), anxiety (TAI), and procrastination (PASS). Data were analyzed in SPSS-23 using hierarchical regression. Results showed that there is a significant correlation between anxiety and procrastination. Furthermore, this study showed that acceptance and mindfulness did not contribute to the prediction of academic procrastination over and beyond trait anxiety. Non-acceptance of private experiences is one route to anxiety, which can lead to lack of persistence to avoid the tasks. Cultural differences may explain the findings.

Keywords: Mindfulness, Acceptance and Academic Procrastination, Anxiety

1. Background

Procrastination is considered as the voluntary delay of action, despite expecting adverse outcomes due to the delay. The prevalence of procrastination has reported up to 95% among students (1). Procrastination results in the decrease of academic performance (2), and on the other hand, it is related to anxiety (3). While procrastination is used to avoid unpleasant consequences, and as a result is considered as an emotion regulation (4), studies show that procrastination can lead to a significant increase in distress (5). Although the relationship between anxiety and academic procrastination has been investigated in western cultures, underlying mechanisms in this relationship are not fully known.

One of the variables that is related to anxiety and academic procrastination is acceptance. Acceptance has been conceptualized as a regulatory process which enables people to experience the present moment without judgment or avoidance (6). Acceptance has a significant correlation with anxiety (7). Additionally, procrastination is negatively correlated with acceptance (8) because procrastination is a way to avoid and run away from negative thoughts,

and emotions to feel better in the short term (9). Acceptance and commitment therapy (ACT) suggests psychological problems originate from experiential avoidance (10). ACT highlights the importance of skills in non-judgmental acceptance of present-moment experiences which seems especially well suited to the treatment of academic procrastination, that is a kind of avoidance (11). Acceptance is aimed at developing psychological flexibility which is considered as the ability to choose activities according to one's values in spite of unpleasant or unwanted private feelings and thoughts. Mindfulness is another construct that is associated with lower levels of rumination, worry, anxiety, depression, and anger (12). Mindfulness is considered as a non-judgmental awareness of the present feelings, thoughts, and in general experiences with openness and acceptance (13). Excessive orientation toward the future or past in dealing with stressors may have a correlation with anxiety (13). A study showed procrastination was negatively correlated with mindfulness (4), and low mindfulness explained stress associated with procrastination. A study showed acceptance and mindfulness contributed to the variance of procrastination (8). Procrastinators expe-

rience lower acceptance of themselves (14). A study investigated the relation between procrastination and anxiety, considering self-compassion as a mediator (3). Another research investigated the relationship between anxiety and acceptance in Iranian students (15). However, research on the relationship among these variables is still in its nascent stages. Previous studies have focused on investigating the efficacy of acceptance-based interventions on procrastination and anxiety disorders in the clinical sample. Noteworthy, most studies have investigated the effectiveness of mindfulness-based therapy on anxiety disorders in clinical samples. Only a few studies have studied the relationship between mindfulness and state anxiety in a non-clinical sample. It is not clear if acceptance and mindfulness can increase the prediction of academic procrastination over trait anxiety in the Iranian culture, since the judgment, lack of acceptance, and procrastination are strongly influenced by cultural differences (3, 16). Judgment and lack of acceptance are more common in Eastern cultures like Iran (3). Prior researches showed that Eastern participants are more likely to judge themselves (3). On the other hand, Eastern participants tend to show a higher level of procrastination (16).

2. Objectives

Thus, it is necessary to investigate the relationship of the aforementioned variables in other cultures. While many studies investigated the relationship between mindfulness, acceptance, academic procrastination, and anxiety, to date the role of mindfulness and acceptance in procrastination have not fully been studied. This study aims at investigating whether mindfulness and acceptance can increase the prediction of academic procrastination over and beyond trait anxiety in the Iranian culture.

3. Methods

In this cross-sectional research, students were selected via the cluster sampling method from Shahed University, with the total population of 10672. Some classes were chosen randomly and then questionnaires were distributed among students who agreed to participate in the research. Informed consent was obtained from participants. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

3.1. Subjects

Green (17) suggested to test the individual predictors a minimum sample size of $104 + k$ is necessary (where k is the number of independent variables). Therefore, participants for this correlational research include 111 university students, including 56 female students and 55 male students. The mean age of the subjects was $20.72 (\pm 2.32)$ years.

3.2. Measures

The following measures were used in this research.

3.2.1. Kentucky Inventory of Mindfulness Skills

The Kentucky inventory of mindfulness skills (KIMS) was developed by Baer et al. (18). It contains 39 items and is designed to measure dimensions, including acceptance without judgment, observing, act with awareness, and describing. The KIMS items are rated on a 5-point Likert scale. The internal consistency of this scale has been reported between 0.76 and 0.91 for four subscales (18). An Iranian version of the KIMS has a Cronbach's alpha of 0.82 (19).

3.2.2. Trait Anxiety Inventory

Trait anxiety inventory (TAI) consists of 20 questions and has good reliability (0.86) (20). The relationship among TAI, Taylor manifest anxiety scale, and Cattell were 0.73 and 0.85. An Iranian study showed Cronbach's alpha coefficients for trait anxiety was 0.90, and re-test reliability coefficient for the trait anxiety scale was 0.68 (21).

3.2.3. Acceptance and Act Inventory-Second Edition

The acceptance and act inventory-second edition (AAQ-II) has seven items; it was developed by Bond, et al. (12). The mean Cronbach's alpha for clinical and non-clinical groups was 0.84. The AAQ-II was also validated in Iran. Cronbach's alpha of AAQ-II was reported 0.82 (22).

3.2.4. Procrastination Assessment Scale-Student

Solomon and Rothblum (1984) presented the procrastination assessment scale-student (PASS) (1). PASS consists of 18 items. Alpha coefficient of PASS was reported 0.77 (23). Researchers reported the reliability of 0.78 (24). Noteworthy, the factor analysis showed that there are four factors (24).

3.3. Statistical Analysis

Descriptive results, Pearson correlation, as well as hierarchical regression, were calculated in SPSS-23. Hierarchical regression is a way to show if independent variables explain a statistically significant amount of variance in dependent variable after accounting for all other variables (25).

4. Results

Descriptive results are presented in Table 1. Table 1 represents an acceptable Kurtosis and Skewness of procrastination.

Results concerning the correlation among variables are presented in Table 2.

First, assumptions of multiple regression are tested. A linear relation among procrastination, mindfulness, and anxiety exists. No multicollinearity was observed, with VIF being lower than 10 and tolerance being above 0.2. Durbin Watson value in this research is 2.10. Homoscedasticity in this study was met. Residuals also have a normal distribution. The values of Cook's Distance were below one.

Only two components of mindfulness including act with awareness and describing have a significant relationship with procrastination ($P \leq 0.05$).

The anxiety was entered in the first step, and then the acceptance and components of mindfulness were entered in the second step (Table 3). Results indicated anxiety significantly predicted procrastination ($R^2 \Delta = .15$; $P < 0.001$). Furthermore, acceptance and the components of mindfulness did not contribute to the prediction of academic procrastination after controlling for trait anxiety ($R^2 \Delta = .02$; $P > .05$). In the second step, no variable had a significant contribution to the prediction of the dependent variable.

5. Discussion

This study aims at investigating whether mindfulness and acceptance can increase the prediction of academic procrastination over and beyond trait anxiety. Results showed that anxiety is significantly correlated with procrastination. This finding is consistent with previous results (8, 9, 14). This study also showed that acceptance, act with awareness, and describing did not contribute to the prediction of academic procrastination over and beyond trait anxiety. This result is inconsistent with the result of Glick et al. (8). Cultural differences may explain this finding. A study (3) showed the higher levels of self-judgment and overidentification in the Iranian culture, so that among six components of self-compassionate only self-judgment and overidentification fully explained the relationship between anxiety and procrastination. Another study in Eastern culture verified the higher level of self-judgment (18) showed that Taiwanese had a higher level of self-judgment and over identification. Inducing shame by Taiwanese parents is a way to socialize and discipline children (19). They also frequently judge and criticize their children as a mean to correct their behavior. Eastern societies use shame and judgment to correct behavior. On

the other hand, Eastern participants tend to show a higher level of procrastination (16).

Non-acceptance of emotional experiences is considered as a tendency to avoid experiencing unpleasant feelings (20, 21) and as a tendency to have negative meta-reactions to unfavorable emotions (12). It is possible that mindfulness impacts symptoms through this non-acceptance of emotional experiences (22). Some researches showed a negative correlation between mindfulness and non-acceptance of unpleasant emotion (1). Mindfulness group in comparison to unfocused attention had a higher level of willingness to view unfavorable images, which was representative of decreased non-acceptance (23).

Since excessive orientation toward the future or past when dealing with stressors may have a correlation with anxiety (20), the non-judgmental experience of the present moment may effectively counter the influences of stressors (3). Mindfulness via teaching individuals to react to stress more reflectively may effectively counter avoidance reactions aimed at changing the frequency or intensity unpleasant internal experiences (24). These maladaptive strategies can play a significant role in the maintenance of many emotional disorders.

The main processes that result in psychological inflexibility include experiential avoidance and cognitive fusion (26). Cognitive fusion happens when people overidentify with thoughts that dominate behavior and limit the possible repertoire of responses (10, 26). Furthermore, overidentification with thoughts contributes to experiential avoidance. The experiential avoidance is considered as the attempt to eliminate, control, or avoid unwanted experiences (26). Experiential avoidance and cognitive fusion play a significant role in academic procrastination (27). Doubts about self-efficacy and/or negative thoughts about a task, and fears of failure increase unpleasant feelings, so students tend to avoid them, delaying starting or finishing the task. Research showed task salience, fear of failure, task aversion, and locus of control have a significant role in procrastination (27). ACT considers these variables as indicators of psychological inflexibility. On the other hand, mindfulness leads to a significant reduction of stress (28) and increase of persistence (29). These findings show procrastination is aimed at regulating the immediate mood, which is not successful. In conclusion, non-acceptance of private experiences is one route to anxiety, which can lead to lack of persistence to avoid the tasks. As a result, further anxiety is experienced when the tasks are procrastinated. It is recommended that studies address other variables which are thought to underlie the relationship between anxiety and procrastination.

The current results can be seen within the context of

Table 1. Descriptive Findings of Variables Including Procrastination, Anxiety, Mindfulness and its Subscales

Variable	Mean	Std. Deviation	Skewness	Kurtosis
Mindfulness	3.17	0.39	0.51	-0.18
Observing	17.81	4.68	0.13	-0.16
Acceptance without judgment	34.16	3.88	0.38	1.38
Act with awareness	25.42	5.15	0.005	-0.21
Describing	33.62	6.37	-0.06	0.45
Procrastination	55.75	9.94	0.15	-0.07
Anxiety	2.01	0.48	0.23	-0.13
AAQ	35.17	8.64	-0.72	0.34

Abbreviation: AAQ, action and acceptance questionnaire

Table 2. Correlations Among Variables Including Procrastination, Anxiety, Mindfulness, and its Subscales

Variable	1	2	3	4	5	6	7	8
1. Mindfulness	1							
2. Observing	0.44 ^a	1						
3. Acceptance without judgment	0.67 ^a	0.25 ^a	1					
4. Act with awareness	0.70 ^a	-0.04	0.27 ^a	1				
5. Describing	0.78 ^a	-0.004	0.45 ^a	0.60 ^a	1			
6. Procrastination	-0.11	0.10	-0.07	-0.22 ^b	-0.23 ^b	1		
7. Anxiety	-0.61 ^a	-0.01	-0.43 ^a	-0.59 ^a	-0.64 ^a	0.42 ^a	1	
8. AAQ	0.45 ^a	-0.11	0.21 ^b	0.47 ^a	0.57 ^a	-0.345 ^a	-0.61 ^a	1

Abbreviation: AAQ, action and acceptance questionnaire

^a $P \leq 0.01$

^b $P \leq 0.05$

Table 3. Result of Hierarchical Regression Analysis^a

Variable	B	Std. Error	Beta	Sig.
Step 1				
(Constant)	38.406	4.037		0.001
Anxiety	8.679	1.967	0.397	0.001
Step 2				
(Constant)	26.383	16.711		0.118
Anxiety	9.427	3.119	0.431	0.003
Observing	0.177	0.204	0.083	0.389
Acceptance without judgement	0.197	0.274	0.078	0.473
Act with awareness	0.130	0.229	0.067	0.571
Describing	0.123	0.216	0.079	0.570
AAQ	-0.193	0.140	-0.167	0.169

^a $R^2 = 0.150^{**}$ for step 1 ($P < 0.001$), $\Delta R^2 = 0.152$ for step 2 ($P > 0.05$).

some limitations. This study cannot establish the directionality of the causal links. Longitudinal designs can be helpful in investigating the directionality of links pre-

sented by theory. Secondly, this study focused on student sample, which can limit the generalizability of the findings. So, it is suggested that future studies focus on com-

munity sample and conduct a longitudinal research.

Acknowledgments

Researchers of this study would like to express their sincere gratitude to all of the participants.

Footnotes

Authors' Contribution: All authors had an equal role in design, work, statistical analysis, and manuscript writing.

Conflict of Interests: The authors declare no conflict of interest.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the Institutional and/or National Research Committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Funding/Support: None.

References

- Solomon LJ, Rothblum ED. Academic procrastination: Frequency and cognitive-behavioral correlates. *J Couns Psychol.* 1984;**31**(4):503-9. doi: [10.1037/0022-0167.31.4.503](https://doi.org/10.1037/0022-0167.31.4.503).
- Kim KR, Seo EH. The relationship between procrastination and academic performance: A meta-analysis. *Pers Individ Differ.* 2015;**82**:26-33. doi: [10.1016/j.paid.2015.02.038](https://doi.org/10.1016/j.paid.2015.02.038).
- Salehzadeh Einabad Z, Dorban G, Nainian M. The mediating role of self-compassion in the relationship between anxiety and procrastination. *Zahedan J Res Med Sci.* 2017;**19**(9). doi: [10.5812/zjrms.11773](https://doi.org/10.5812/zjrms.11773).
- Sirois F, Pychyl T. Procrastination and the priority of short-term mood regulation: Consequences for future self. *Soc Pers Psychol Compass.* 2013;**7**(2):115-27. doi: [10.1111/spc3.12011](https://doi.org/10.1111/spc3.12011).
- Patry DA, Blanchard CM, Mask L. Measuring university students' regulatory leisure coping styles: Planned breathers or avoidance? *Leisure Sci.* 2007;**29**(3):247-65. doi: [10.1080/01490400701257963](https://doi.org/10.1080/01490400701257963).
- Hayes SC, Wilson KG, Gifford EV, Follette VM, Strosahl K. Experimental avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *J Consult Clin Psychol.* 1996;**64**(6):1152-68. doi: [10.1037/0022-006x.64.6.1152](https://doi.org/10.1037/0022-006x.64.6.1152). [PubMed: [8991302](https://pubmed.ncbi.nlm.nih.gov/8991302/)].
- Masuda A, Tully EC. The role of mindfulness and psychological flexibility in somatization, depression, anxiety, and general psychological distress in a nonclinical college sample. *J Evid Complement Altern Med.* 2011;**17**(1):66-71. doi: [10.1177/2156587211423400](https://doi.org/10.1177/2156587211423400).
- Glick DM, Millstein DJ, Orsillo SM. A preliminary investigation of the role of psychological inflexibility in academic procrastination. *J Context Behav Sci.* 2014;**3**(2):81-8. doi: [10.1016/j.jcbs.2014.04.002](https://doi.org/10.1016/j.jcbs.2014.04.002).
- Tice DM, Bratslavsky E. Giving in to feel good: The place of emotion regulation in the context of general self-control. *Psychol Inq.* 2000;**11**(3):149-59. doi: [10.1207/s15327965pl11i03_03](https://doi.org/10.1207/s15327965pl11i03_03).
- Hayes SC, Strosahl KD, Wilson KG. *Acceptance and commitment therapy: The process and practice of mindful change.* New York, NY: The Guilford Press; 2011.
- Dionne F, Duckworth K. *Acceptance and commitment therapy in the treatment of academic procrastination: A perfect fit.* Parma, Italy: ACBS World Conference IX; 2011. Available from: <http://www.frederickdionne.ca/index.php/publications/>.
- Bond FW, Hayes SC, Baer RA, Carpenter KM, Guenole N, Orcutt HK, et al. Preliminary psychometric properties of the acceptance and action questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behav Ther.* 2011;**42**(4):676-88. doi: [10.1016/j.beth.2011.03.007](https://doi.org/10.1016/j.beth.2011.03.007). [PubMed: [22035996](https://pubmed.ncbi.nlm.nih.gov/22035996/)].
- Brown KW, Ryan RM, Creswell JD. Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychol Inq.* 2007;**18**(4):211-37. doi: [10.1080/10478400701598298](https://doi.org/10.1080/10478400701598298).
- Sirois FM. Procrastination and stress: Exploring the role of self-compassion. *Self Identity.* 2013;**13**(2):128-45. doi: [10.1080/15298868.2013.763404](https://doi.org/10.1080/15298868.2013.763404).
- Salehzadeh Einabad Z, Mojtahedzadeh M, Khalili E, Nainian M. Investigation of the relationship among acceptance, control, avoidance and anxiety and gender differences in anxiety. *Rooyesh-e-Ravanshenasi J.* 2018.
- Klassen RM, Ang RP, Chong WH, Krawchuk LL, Huan VS, Wong IYF, et al. A cross-cultural study of adolescent procrastination. *J Res Adolescence.* 2009;**19**(4):799-811. doi: [10.1111/j.1532-7795.2009.00620.x](https://doi.org/10.1111/j.1532-7795.2009.00620.x).
- Green SB. How many subjects does it take to do a regression analysis. *Multivariate Behav Res.* 1991;**26**(3):499-510. doi: [10.1207/s15327906mbr2603_7](https://doi.org/10.1207/s15327906mbr2603_7). [PubMed: [26776715](https://pubmed.ncbi.nlm.nih.gov/26776715/)].
- Baer RA, Smith GT, Allen KB. Assessment of mindfulness by self-report: The Kentucky inventory of mindfulness skills. *Assessment.* 2004;**11**(3):191-206. doi: [10.1177/1073191104268029](https://doi.org/10.1177/1073191104268029). [PubMed: [15358875](https://pubmed.ncbi.nlm.nih.gov/15358875/)].
- Dehghan Maneshadi Z, Taghavi M, Dehghan Maneshadi Z. Investigation of the psychometric features of FFMQ. *Thought Behav Clin Psychol.* 2013;**7**(26):27-37.
- Spielberger CD. *Manual for the state-trait anxiety inventory.* Palo Alto, CA: Consulting Psychologists Press; 1983. doi: [10.1037/t06496-000](https://doi.org/10.1037/t06496-000).
- Panahi Reishahri M. [*Preliminary investigation of the validity, reliability and normalization of the Spielberger test*]. Tehran, Iran: Tarbiat Modares University; 1992. Persian.
- Abbasi I, Fata L, Moloudi R, Zarrabi H. Psychometric adequacy of AAQ-II. *J Psychol Model Method.* 2012;**2**(10):65-80.
- Yockey RD, Kralowec CJ. Confirmatory factor analysis of the procrastination assessment scale for students. *SAGE Open.* 2015;**5**(4):21582440156114E+14. doi: [10.1177/2158244015611456](https://doi.org/10.1177/2158244015611456).
- Mortazavi F, Mortazavi SS, Khosrorad R. Psychometric properties of the procrastination assessment scale-student (PASS) in a student sample of Sabzevar University of Medical Sciences. *Iran Red Crescent Med J.* 2015;**17**(9). e28328. doi: [10.5812/ircmj.28328](https://doi.org/10.5812/ircmj.28328).
- Field A. *Discovering statistics using SPSS.* 3rd ed. London: Sage Publications Ltd; 2009.
- Harris R. *ACT made simple: An easy-to-read primer on acceptance and commitment therapy.* Oakland, CA: New Harbinger; 2009.
- Scent CL, Boes SR. Acceptance and commitment training: A brief intervention to reduce procrastination among college students. *J Coll Stud Psychother.* 2014;**28**(2):144-56. doi: [10.1080/87568225.2014.883887](https://doi.org/10.1080/87568225.2014.883887).
- Brown KW, Ryan RM. The benefits of being present: Mindfulness and its role in psychological well-being. *J Pers Soc Psychol.* 2003;**84**(4):822-48. doi: [10.1037/0022-3514.84.4.822](https://doi.org/10.1037/0022-3514.84.4.822). [PubMed: [12703651](https://pubmed.ncbi.nlm.nih.gov/12703651/)].
- Evans DR, Baer RA, Segerstrom SC. The effects of mindfulness and self-consciousness on persistence. *Pers Individ Differ.* 2009;**47**(4):379-82. doi: [10.1016/j.paid.2009.03.026](https://doi.org/10.1016/j.paid.2009.03.026).