

Effect of ACT on Work Procrastination and Work Performance

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Abstract

The purpose of this study was to investigate the effect of Acceptance and Commitment Therapy (ACT) on university employees' work procrastination and work performance. This was an experimental study with pretest-posttest control group design. In this study selected 56 employees by Krejcie & Morgan (1970) technique. They were completed Work procrastination (Metin, Taris, & Peeters, 2016) and work performance (McColl, Paterson, Davies, Doubt, & Law, 2000) questionnaires. Then 24 participants who got a high score in work procrastination and low score in work performance were chosen. They were then randomly assigned into experimental and control groups. After that, the experimental group participated in 7 sessions of acceptance and commitment therapy and the control group received no intervention. Both groups were given pre-test and post-test before and after the intervention, respectively. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (multivariate analysis of variance). Results indicated that the treatment had a significant effect on reducing work procrastination ($F = 6.57$; $P < 0.05$), but had no effect on work performance.

Keywords: Acceptance and Commitment Therapy (ACT), Work procrastination, Work performance

Introduction

Today's business environment is to a large extent turbulent and complex, and business paths are changing very fast. In the previous psychological contracts, one entered into the organization, worked hard and well, was adherent and committed, and thus received more rewards, and ultimately enjoyed occupational safety. But today, the contract has been replaced with a new contract which is based on continuous learning and identity change. In short, the organizational career path is dead, and instead, a diverse or infinite career path has grown (Russell, 2003). Therefore, the work environment has changed, and consequently, the attitudes and occupational behaviors of individuals have also changed. The two main issues in today's occupational organizations and environments are job procrastination and, in contrast, job performance (Hartung, Savickas, & Walsh, 2015)

Procrastination means neglecting, dodging, and procrastinating, whose literal meaning is to postpone tasks for another day (Howell, Watson, Powell, & Buro, 2006). In the view of some researchers, procrastination is considered as a behavior, which means avoiding a particular task, and in the view of most researchers and counselors, it is regarded as an attribute, that is, the tendency to show a normal response in a wide variety of situations (Schouwenburg, Lay, Pychyl, & Ferrari, 2006).

Milgram carried out the first real analysis of procrastination and believed that too many requirements and deadlines in the advanced societies lead them to procrastination (Milgram, Sroloff, & Rosenbaum, 1988). On the other hand researchers believe that there has been procrastination for much of *history*, but it has taken on negative meanings with the advent of the Industrial Revolution (Ferrari, Johnson, & McCown, 1995). In contrast, (Jackson, Fritch, Nagasaka, & Pope, 2003) have developed this theory that procrastination is a modern disease, which is increasingly growing and expanding

Procrastination is a very common phenomenon, which especially affects almost 80-85% of students in the field of education (Wieber & Gollwitzer, 2010). In addition to academic areas, procrastination is also widespread in occupational positions that put a lot of time pressure on employees. Research conducted over the last decade also show that procrastination is a type of self-regulatory failure which is accompanied by adverse consequences (Chowdhury, 2016; Nguyen, Steel, & Ferrari, 2013). As those employees who are procrastinators generally have difficulty with managing their time and put off their tasks until the last minute, they will suffer from mental stress, occupational stress (Eerde, 2003). In this line, assessments in Australia, United States, Europe and Canada also show that one in ten employees suffer from depression, anxiety, stress, or burnout, and it was found that about 3-4 percent of them is spent on mental health problems in the workplace worldwide. Therefore fatigue, despair, leaving the job, absence from work and failure, and physical and mental problems are among the characteristics of employees of the organizations whose people are *afflicted* with *procrastination*; and lack of development, and drop of performance and efficiency are among their organizational characteristics (Flaxman, Bond, & Livheim, 2013).

Accordingly, as work procrastination increases, a decline in work performance is likely seen. Work performance is defined as a behavior which is accompanied by the fulfillment of the requirements associated with the expected, specialized or formal role

among the members of the organization. Therefore, job performance includes the in- role behavior which can be related to rewards. The historical framework used to understand the functional components is as follows: Performance is product of ability multiplied by motivation. Ability is the product of attitude (the physical and mental abilities that a person brings to a job) multiplied by training and (technical, individual, policy) resources. Motivation is equal to the person's desire and commitment (perseverance) to performance (Brown & Lent, 2004).

Most performance problems are usually thought to be dependent on ability, motivation, or situational factors (Carson, Cardy, & Dobbins, 1991). It is believed that the ability factors include skills and talents such as job knowledge, intelligence, interpersonal skills; motivation factors include expanding the range of attempts in the job area, and situational or system factors, including organizational characteristics such as poor coordination of occupational activities among employees, inappropriate information or instruction for performing in an organizational post, the lack of appropriate tools or malfunctioning or defective tool, inadequate financial resources, poor supervision, poor working environment such as cold, heat, noise, repeated harassment etc., may positively or negatively affect performance (Briscoe, Tarique, & Schuler, 2012).

As human resources are one of the greatest resources and capitals of any organization, whose health has a determinant role in increasing productivity, any planning or even investment in this section, which leads to the employees' health maintenance and improvement, can ultimately lead to increased efficiency and be accompanied by return on investment. Accordingly, empirical research has been so far done regarding the reduction of procrastination via rewards and encouragement (Cadena, Schoar, Cristea, & Delgado-Medrano, 2011), cognitive-behavioral therapy (Schouwenburg et al., 2006) and time management (Eerde, 2003) in various occupational environments. Additionally, in the job performance area, a lot of studies have been carried out (e.g., (Alessandri, Borgogni, Schaufeli, Caprara, & Consiglio, 2015; Jex, 1998; Kishita & Shimada, 2011; Singh & Singh, 2018) and some empirical controlled interventions have also led to an increase in employees performance (Baer, 2015).

One of the most recent empirical interventions in occupational environments is the application of ACT which has received considerable attention in recent years (Bond, Flaxman, & Livheim, 2013). ACT is a kind of behavioral therapy based on mindfulness. In this therapeutic technique, a combination of metaphor, paradoxical statements and mindfulness skills and a wide range of experiential exercises and behavioral interventions are used. In fact, ACT is a mix of acceptance and mindfulness practices along with commitment and behavior change. In this approach, people learn to accept their thoughts without judgment instead of challenging them, and the goal is to train people to identify their life values and to plan and act accordingly (Hayes, Strosahl, & Wilson, 2009).

(Bond & Bunce, 2000) conducted the first study on the effect of ACT on occupational and professional environments. They concluded that acceptance is a mechanism through which one can manage work and worksite-related stresses to get mentally healthy. Moreover, conducting a study on psychological flexibility, ACT, and organizational behavior, Bond and Hayes showed how ACT results in behavioral health in the organization (Bond & Dryden, 2005). Additionally (Bond, Flaxman, van Veldhoven, &

Biron, 2010) found that the core ACT processes such as being in the present moment, observing self as context, and clearing values lead to the improvement of the individual and organization performance.

As work-related stress is the most important concern of today's workplace (Bannon, 2010; Van Wyk, 2004) Flaxman and Bond conducted a special study on the effect of ACT in work place on the employees' stress and confirmed its efficiency (Flaxman & Bond, 2006). A lot of research has been focused on the effectiveness of ACT on reducing employees' stress (Bannon, 2010; Bond & Bunce, 2000; Brinkborg, Michanek, Hesser, & Berglund, 2011; Flaxman & Bond, 2010; Hermann, 2008; Schwetschenau, 2008; Wersebe, Lieb, Meyer, Hofer, & Gloster, 2018) and show well the effect of this approach. Among other ACT interventions in the workforce is the effect of this therapeutic approach on the employees' job burnout (Hayes et al., 2004). (Flaxman et al., 2013) also conducted a study using a controlled pilot trial of ACT in the workplace, and published the results in their book. Although the effect of this approach on stress, burnout, workforce's health or life quality has been well researched, there is scant research about work procrastination and work performance using this approach. In the light of the above, it seems that further national investigations are required to be done in this regard. Accordingly, the main goal of the present study is to investigate the effect of ACT on the university employees' work procrastination and work performance.

Methods

The current research is a quasi-experimental study with pretest-posttest control group design.

The statistical population of this research consisted of a public university employees. In this study, the sample size was estimated to be as $N=24$ based on the study design. Samples were selected as follows: First, work procrastination questionnaire and work performance questionnaire were randomly distributed among 56 cases of employees. In order to observe all ethical issues related to the research, a thorough description of the questionnaire was given to employees before distributing the questionnaires. Of them, 24 persons who got a high score (above mean) in procrastination and low score in work performance (below mean) were identified and randomly divided into two experimental and control groups ($N=12$ per group). The sessions of Act are summarized in Table 1.

Table 1. Summary of ACT-based treatment sessions

session	title	summery
1	Introduction	1. Introduction and acquaintance 2. group rules, 3. the purpose of forming the group 4. defining work procrastination and job performance.
2	Creative helplessness	1. reviewing the previous session's issues. 2.to identify members' solutions to mental events during procrastination and job performance situations and to examine their effectiveness. 3.establishment of Creative helplessness

		4. Giving a task
3	Controlling the problems	1. To Introduce the control as an issue that helps members experience the paradoxical effects 2. To Introduce acceptance as a way instead of controlling the mental experiences 3. To give a task to increase members' awareness
4	Cognitive defusion	1. to explain and clarify the effect of sticking to thoughts and feelings. 2. To give task for fusion practice
5	Self as a context	1. To introduce the types of fusion, 2. To introduce self as a context 3. To Encourage members to be in the present 4. Giving the task
6	values	1. To introduce values as the priorities and important aspects of life, especially job 2. Goal setting based on values
7	commitment	1. to Identify barriers that they encounter to achieve their goals 2. to solve the Problems for external obstacles 3. Summarize the titles of the topics by introducing the three words of mind, life and awareness.

Work Procrastination Questionnaire: This questionnaire was made by (Metin et al., 2016). It measures the level of procrastination observed among the employees in administrative works. This is a 25-item scale with three components of inefficiency, mental anxiety and *hating assignment*. The questionnaire's items are scored on a 5-point scale (always = 5 and never = 1). Only item 1 is reversely scored. These researchers used concurrent validity and exploratory factor analysis to investigate the validity of this scale. The *concurrent validity coefficient* was reported to be 0.63, which was significant at a level less than 0.01. The results of factor analysis also showed that the three-factor model of this scale fitted into the target population (Metin et al., 2016). In the present study, Cronbach's alpha coefficient was calculated to be 0.84.

Work Performance Questionnaire: designed Work Performance Questionnaire with 16 items. This scale has two forms; one of them is to measure the work performance of non-managerial employees, and another to assess managers' work performance. This form is intended to measure the performance of non-managerial employees. This questionnaire assesses four components of discipline in work (items 1 to 4), the sense of responsibility in the work (items 5 to 8), collaboration in work (items 9 to 12), and work improvement (items 13-16). Each item is rated on a five-point scale (always = 4, and rarely = 1) (McColl et al., 2000). In the present study, Cronbach's alpha coefficient was obtained to be 0.79.

Results

The mean and standard deviation of work procrastination and work performance for experimental and control groups in two stages of pre-test and post-test are summarized in Table 2.

Table 2. Mean and standard deviation of work procrastination and work performance scores for experimental and control groups in the pre-test and post-test stages

Variable	the level	group	mean	Standard deviation
Work procrastination	pre-test	Experiment	64.58	9.94
		Control	60	12.46
	Post-test	Experiment	54.25	9.76
		Control	65.08	16.53
Work Performance	pre-test	Experiment	67.16	8.97
		Control	68.75	4.33
	Post-test	Experiment	68.91	4.48
		Control	65.50	14.06

Results presented in the table 2 show that the work procrastination scores of experimental group in the post-test stage have reduced compared to the pre-test, while the control group scores in this variable increased. Work performance scores in the experimental group increased slightly during the post-test, while the work performance scores of the control group decreased slightly.

In order to statistically analyze these differences, multivariate analysis of covariance (MANCOVA) was used. The results are presented below. One of the basic assumptions of MANCOVA analysis is the equality of observed covariance matrix in dependent variable for intended groups which is estimated using Box's test. The results of this test are presented in Table 3.

Table 3. Summary of Box's test for equivalence of matrices

Significance probability	Df2	Df1	F	M
0.14	87120	3	1.81	6.05

According to the contents of Table 3, the significance of Box's test is greater than 0.05. Therefore, it is concluded that the observed covariance matrices of dependent variables are homogenous across different groups. Among other assumptions of MANCOVA analysis is the homogeneity of variances. For this purpose, Levene Test is used. The results of which are summarized in Table 4.

Table 4. Summary of Levene Test for equality of variance error

Variable	F	Df1	Df2	Significance probability
Work procrastination	4.13	1	22	0.06
Work Performance	2.10	1	22	0.16

The results of Table 4 presented in the above table show that Levin's test in both dependent variables is not significant. Therefore, the equivalence assumption of variances is confirmed for these variables. Table 5 illustrates the results of MANCOVA analysis given the confirmation of variance analysis assumptions.

Table 5. Summary of the results of MANCOVA on procrastination and work performance scores between the control and experimental groups (by controlling pretest stage)

	Variables	Sum of squares	Degree of freedom	Average of the squares	F	Significance level	<i>Eta-square</i> (22)
group	Work Procrastination	1010.28	1	1010.28	6.57	0.02	0.24
	Work Performance	154.32	1	154.32	1.61	0.2	0.07
Error	Work procrastination	3071.60	20	153.58			
	Work Performance	1906.61	20	95.33			
Total	Work Procrastination	902.02	24				

According to the results of the above table, the F value for work procrastination is equal to 6.57, which is significant at a significance level less than 0.05, and the F value for work performance is 1.61, which is not significant even at a significance level less than 0.05. Accordingly, it can be said that ACT is effective in reducing the employees' work procrastination and has no effect on their work performance.

In the next stage, the analysis of MANCOVA was done on three subscales of (inefficiency, mental anxiety and *hating assignment*), and it was found that ACT has been effective only on the efficiency dimension ($F = 49.5$ and $P < 0.05$).

Discussion

As the results indicate, ACT has been effective in reducing employees work procrastination and work inefficiency dimension. Research conducted by Hosseinani et al. (2013), Kazemian (2015) and the present study are among the first experimental applications of ACT in the work environment in Iranian society. Kazimian (2015) investigated the effect of ACT on work procrastination among employees of an industrial company in Isfahan and showed that ACT reduces work procrastination, which is completely consistent with the results of the present study. In the study conducted by Hosseinani et al. (2013) it was found that ACT has been effective in reducing occupational stress but not in reducing employees job burnout. As research has shown,

the positive relationship between occupational stress and work procrastination ((Van Wyk, 2004; Wersebe et al., 2018), it can be said that the results of current research are in agreement with those obtained by previous studies.

In the ACT approach, it's believed that individuals in organizations should not only be able to grow their own acceptance and diffusion but also must define and determine their own personal values. When people do not behave according to their work values at work, they are at risk of neglecting the positive incentives that make them healthy at work(Flaxman et al., 2013).

When people realize their fusion with performing job duties and learn how to accept the negative thoughts and feelings caused by their working conditions, diffuse from them, and act based on their values in spite of the existence of them, their work procrastination is significantly reduced because fusing with thoughts and emotions such as fatigue, injustice, stress, hard work, lack of gratitude, unexpected expectations of clients, etc., can lead to a reduction in the performance in job duties and become a habit in long-term.

When people encounter jobs that are unattractive, tedious, or beyond their ability, the best way to get rid of this situation is to avoid and delay negative thoughts and feelings, and take refuge in other pleasurable activities. In the present study, after people became aware of why their efforts were not effective in calming down their thoughts and feelings of negativity, and as a result, postponing their job assignments to another time, they were directed toward acceptance of these thoughts and feelings, and then diffusion of them. In these sessions, using different metaphors, the process of acceptance and diffusion was practiced practically with examples of real situations, and with emphasis on knowledge and awareness of work values, the process of commitment and adherence to values was described, and exercises were presented to attain the work goals on the path of values.

One of the problems that procrastinator employees face is the feeling of ineffectiveness in performing their work affairs (Saffari Nia, 2012). The feeling of ineffectiveness in job is defined as a person's judgment about his abilities to perform assignments and certain occupational and professional tasks(Brown & Lent, 2004). When people have such a feeling about performing their duties, the rate of their work procrastination also increases.

The results of this study showed that ACT has significantly reduced the level of work inefficiency. One of the basic processes of ACT has been conceptualized as self-adhesion. In fact, people adherence to descriptions used for them leads to ineffective behaviors and things that ultimately strengthen a bad sense of self in them. When people become aware of their minds during the course of the treatment and learn to separate from them by accepting their thoughts and feelings (diffusion), they can act beyond the limits of a dysfunctional person only in accordance with the values and are committed to them. So, when they are doing their job despite their ineffectiveness, this feeling is reduced significantly. On the other hand, fulfilling duties, despite the acceptance of negative feelings and thoughts, can lead to a successful experience, which is a very important source for the sense of efficiency, and according to the cognitive-social theory of the career path, this positive experience(Lent, Brown, & Hackett, 1994) can reduce their dysfunctionality.

Among other problems of procrastinators in work affairs are anxiety and *hating* some or all of job responsibilities. The results of this study showed that ACT did not affect these two dimensions of procrastination. Being fused with these feelings and rejecting them can lead to greater procrastination and divert people from moving towards work values. The model that ACT presents of human suffering emphasizes the point that difficult thoughts and feelings (such as the sense of hating some assignments or mental anxiety) are an inevitable aspect of human life, not the problems that need to be eliminated (Hayes, Strosahl, & Wilson, 1999). In this regard, acceptance and diffusion as two basic principles of treatment can inform people about these thoughts and feelings and lead people to move on the path of values.

However, it is noteworthy that instead of considering reduced anxiety (or any other type of feeling, such as hating assignment or mental anxiety) as the only desirable therapeutic outcome, ACT emphasizes that clients should change their relationship type with that problem (Hayes et al., 1999). As experts in this field have reported, lack of emphasis on reducing the symptom in ACT has led to some research findings which are contrary to expectations (Bach & Moran, 2008). For example, people who have been treated for chronic pain have reported less pain but increased activity and quality of life (Dahl, Wilson, & Nilsson, 2004).

Therefore, these findings are considered to be contrary to expectations only from the perspective of other approaches, and they are completely logical with regard to the goals of ACT, because the ACT results emphasize the obvious behaviors change, such as going to work even when a person feels tired or doing difficult tasks even when they hate them or have mental anxiety. In the present study, metaphorical techniques, contradiction, empirical exercises, values clarification, and mindfulness methods were used to help individuals understand the inefficiency of control strategies and create more flexibility. Increasing the psychological flexibility is the ultimate goal of ACT, which can lead to the reduction of symptoms in the long term (Hayes et al., 2004), but in the short term it may only lead to individual satisfaction. Since the measurement of work procrastination dimensions in this study was done only in two stages (before and after intervention), it can be said that such results indicating lack of effect of intervention on the two dimensions of hating and anxiety in accordance with the basic principles of ACT are not far from expectations. Many ACTs have also shown that a decrease in the severity of the symptoms usually begins later in the course of the treatment or even a few weeks after the end of the treatment (Hayes, 2004). Therefore, long-term follow-ups can clarify the real outcomes of treatment.

It is noteworthy that in experimental and quasi-experimental studies, participants are required to be measured at least in three stages of pre-test, post-test and follow-up, so that the sustainability rate of the results can be determined. One of the main limitations in this study was the lack of follow-up stage due to incomplete responses of the control group. Generally, the community of employees does not tend to respond to such questionnaires more than a few times, and this is a major problem in the experimental research process of the whole Iranian society. Therefore, it seems that in future research, instead of using self-report scales, employers' rating scales would be used to report the performance and work procrastination of employees over time. Among other results of

this study was the lack of ACT effect on employees' work performance. These results are inconsistent with findings obtained by Bond, Flaxman, and van Velhoven (2010) indicating the effectiveness of psychological flexibility and the committed action on job *productivity*, and those obtained by (Bond & Bunce, 2000) indicating the impact of acceptance on work performance.

Work performance is the result of employees' ability and motivation. Therefore, in order to have high performance, people need physical and mental abilities as well as technical, personal and educational abilities on the one hand, and on the other hand, they need direction, intensity and persistence in their job (Amabile, 1993). Therefore, a low-motivated and energetic person does not have high performance, and vice versa. Thus, it can be said that one of the reasons why ACT has no effect on work performance is that all mentioned factors have not been covered in the treatment sessions.

On the other hand, experts believe that different issues affect work performance. An important point in working with employees is to know where they have stood on their career path, are they at the beginning, middle or end of the path? (Brown & Lent, 2004) University employees are generally at the middle of their career path. In this path, they have to update their work skills for new employers and new fields. Most employees are faced with an ever-growing obsolescence (such as limited progress in the future). Obsolescence has to do with the lack of up-to-date knowledge or lack of skills to maintain effective performance in current or future roles. At this stage of the career path, employees may feel tired and useless in their organizational posts (Brown & Lent, 2004). On the other hand, most of the employees are today members of dual career *couples* and manage multiple roles. Obviously, job performance is affected by factors in the workplace and other parts of life such as family or individual life. In this regard, female employees experience more conflicts in their roles, such as spousal, maternity and housekeeping roles, and face more problems (Osterman, 1995) Therefore, more comprehensive programs are needed to manage multiple roles

Feldman (2002) also believes that job performance has a positive relationship with the promotion of employees' knowledge and skills. Therefore, universities need to hold more educational courses to enhance job knowledge and skills for maintaining and increasing performance in the long term. This important issue has received less attention. On the other hand, university employees are in the middle of their career path and are likely less motivated to upgrade their skills and show greater resistance to changing their status. This obsolescence in job roles and lack of upgrading skills needed for performance can lead to inactivity and reduced performance. This study revealed that one of the possible reasons why ACT has no effect on employees performance (who were generally female) is that the treatment sessions were focused only on work roles and values, and multiple roles management skills through knowing the thoughts and feelings associated with each role, acceptance and diffusion, and committed action have not been practiced. In addition, increasing skills and knowledge of the employees, which is one of the important factors of work performance, has not been the focus of the therapeutic sessions. Therefore, it is necessary that further studies use ACT therapeutic principles in the form of multiple roles to increase the employees' performance as well as to promote knowledge and skills.

Conclusion

According to the results of this research indicating the effectiveness of ACT on work procrastination of employees, it is recommended that group *counseling sessions* for *employees* be provided to all employees at the university. Also, the effect of treatment over time and its sustainability should be investigated. One of the most important limitations of this study is that the follow-up stage was not performed due to lack of cooperation of the control group, and therefore, the stability of the results over time is not predictable. Therefore, it is recommended to use other scales which are answered by employers or university authorities.

Disclosure statements

The authors of this study declared no conflicts of interest

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