

A study on the effect of group acceptance and commitment therapy (ACT) instruction on the job stress and job satisfaction

Ali Hosseinaei¹, Hassan Ahadi², Ladan Fata³, Ali Reza Heidarei⁴, Mohamad Mehdi Mazaheri⁵

¹. Department of Psychology, Science and Research Branch, Islamic Azad University, Khouzestan, I.R. Iran.

². Department of Psychology, Allame Tabatabaee University, Tehran, I.R. Iran

³. Department of Psychology, Tehran Medical Science University, Tehran, I.R. Iran

⁴. Department of Psychology, Ahwaz Branch, Islamic Azad University, Ahwaz, Khouzestan, I.R. Iran

⁵. Central Organization, Islamic Azad University, Tehran, I.R. Iran

hosseinaiyf@yahoo.com a_hosseinaei@iauaz.ac.ir

Abstract: Aim of this study was examination of the effects of acceptance and commitment therapy (ACT) on job stress and job satisfaction among personnel of Islamic Azad University, Azadshahr branch. For this aim 96 people of personnel of Islamic Azad University, Azadshahr branch selected by voluntarily sampling and assigned randomly to 3 (experimental, let's talk and control) groups and completed Osipow's Occupational Stress Inventory- Revised Edition (1987) and Job Descriptive Index of Smith, Kendall and Hulin (1969) for pretest. Experimental group were instructed group acceptance and commitment therapy (ACT) based on Bond and Hayes (2004) model for 4 sessions 1.5 hours. In let's talk group individuals were instructed about nutrition and sports (nonrelated to ACT) for 4 sessions 1.5 hours. Control group did not instruct anything. Three groups completed all of instruments for post test. 3 month later experimental and let's talk groups exercised their instructions for 2 sessions 1.5 hours and control group did not. Then 3 groups completed instruments for follow up. Data analysis did by analysis of variance for repeated measures. Results shows that group acceptance and commitment therapy decrease job stress and increase job satisfaction. Acceptance and commitment therapy is effective on job related subjects and can use for improvement of these subjects.

[Hosseinaei A, Ahadi H, Fata L, Heidarei AR, Mazaheri MM. **A study on the effect of group acceptance and commitment therapy (ACT) instruction on the job stress and job satisfaction.** *J Am Sci* 2013;9(1):217-226] (ISSN: 1545-1003). <http://www.jofamericanscience.org>. 34

Keywords: Group acceptance and commitment therapy (ACT) instruction; job stress; job satisfaction

1. Introduction

Acceptance and Commitment Therapy, known as 'ACT' (pronounced as the word 'act') is one of the third generation behavior therapies that based on mindfulness. Mindfulness is consciously bringing awareness to your here-and-now experience with openness, interest and receptiveness. There are many facets to mindfulness, including living in the present moment; engaging fully in what you are doing rather than 'getting lost' in your thoughts; and allowing your feelings to be as they are, letting them come and go rather than trying to control them. When we observe our private experiences with openness and receptiveness, even the most painful thoughts, feelings, sensations and memories can seem less threatening or unbearable. In this way mindfulness can help us to transform our relationship with painful thoughts and feelings, in a way that reduces their impact and influence over our life (Harris, 2006).

ACT is based on a variety of pragmatism known as functional contextualism (Hayes, Hayes, & Reese, 1988; Hayes, Hayes, Reese & Sarbin, 1993). The core analytic unit of functional contextualism is the "ongoing act in context." The core components of functional contextualism are (a) focus on the whole

event, (b) sensitivity to the role of context in understanding the nature and function of an event, (c) emphasis on a pragmatic truth criterion, and (d) specific scientific goals. ACT conceptualizes psychological events as a set of ongoing actions of a whole organism interacting with historically and situationally defined contexts (Hayes, Masuda and De May, 2003).

ACT uses six core principles to help clients develop psychological flexibility: a) Cognitive defusion means we are able to 'step back' and observe language, without being caught up in it. We can recognize that our thoughts are nothing more or less than transient private events - an ever-changing stream of words, sounds and pictures. As we defuse our thoughts, they have much less impact and influence; b) Acceptance is making room for unpleasant feelings, sensations, urges, and other private experiences, allowing them to come and go without struggling with them, running from them, or giving them undue attention; c) Contact with the present moment: bringing full awareness to your here- and-now experience, with openness, interest, and receptiveness; d) The observing self is accessing a transcendent sense of self, a continuity of

consciousness that is unchanging, ever-present, and impervious to harm. From this perspective, it is possible to experience directly that you are not your thoughts, feelings, memories, urges, sensations, images, roles, or physical body. These phenomena change constantly and are peripheral aspects of you, but they are not the essence of who you are; e) Values: clarifying what is most important, deep in your heart, what sort of person you want to be, what is significant and meaningful to you, and what you want to stand for in this life; f) Committed action: setting goals, guided by your values and taking effective action to achieve them (Harris, 2006).

ACT has been used for a wide range of psychological problems and had positive effects. These include depression (e.g., Zettle & Hayes, 1986; Zettle & Raines, 1989), psychosis (e.g., Bach & Hayes, 2002), social phobia (e.g., Block, 2002), trichotillomania (Towhig & Woods, 2004), self-management behaviors and blood glucose in diabetic patients (Gregg, 2004), substance abuse (Hayes, Bissett et al., 2004), distress produced by end-stage cancer (Branstetter et al., 2004), epileptics (Lundgren & Dahl, 2005), math-related anxiety (Zettle, 2003), chronic pain (McCracken, Vowels & Eccleston, 2005), and self-harm and emotional dysregulation among Borderline Personality Disordered patients (Gratz & Gunderson, 2006).

One of the problems that ACT was used for it is work-related or job stress. According to Selye (1976) job stress is state within the organism characterized by general adaptation syndrome. In other word, it is the non-specific response of the body to demand made upon it. It suggests excessive demands that produce disturbance of physiological, sociological and psychological systems. It may be psychological, emotional, social and job related form (Mojoyinola, 2008).

Work-related stress is defined as the harmful physical and emotional responses that occur when job requirements don't match to worker's capabilities, resources and needs (National Institute of Occupational Safety and Health, 1999).

Vagg and Spielberger (1998) outlined four major conceptual approaches that have informed the general occupational stress literature. Person-environment model (Caplan, Cobb, French, Harrison and Pinneau, 1975) focuses on the goodness of fit between characteristics of the person and the properties of the environment. The demand-control model of job stress is concerned with the interactive efforts of level of job pressure (demands) and decision latitudes (control). High demands and low control are associated with high levels of psychological strain (Karasek, Brisson, Kawakami, Houtman, Bongers and Amick, 1998).

Reward imbalance model posits that stress occurs when there is a lack of reciprocity between the effort that a worker puts into a job and the potential rewards she or he receives for completing it (Vagg and Spielberger, 1998). Transactional model believe that potential stressors from the environment are subjected to a two-stage appraisals processes: The person first appraises whether the event is a challenge or a threat; and if it is the latter, he or she then appraises the level of coping resources or what person draws on in order to cope (Lazarus & Folkman, 1984).

Research suggested that a strong negative relationship has been found between occupational stress and job satisfaction (Blegen, 1993; Ahsan, Abdullah, Gun Fie, & Alam, 2009). Job satisfaction defined by Locke (1976, P.1300) as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences".

According to Herzberg, Mausner and Snyderman (1959, cited in Furnham, Petrides, Jackson & Cotter, 2002) two factor theory, workers have two major types of needs: hygiene and motivator. Hygiene needs are said to be satisfied by certain condition called hygiene factors or dissatisfiers such as supervision, interpersonal relations, physical working conditions, salary, benefits job security, etc. These factors concern the context in which the job has to be done. Motivator factors or satisfiers are achievement, responsibility, advancement, etc. These factors concern with the nature and consequences of work. Fulfillment of hygiene needs cannot in itself result in job satisfaction but can in only reduction or eliminate of dissatisfaction. Presence of motivator factors is thought to result in job satisfaction and absence of them do not result dissatisfaction.

In bottom-up approach of job satisfaction is assumed that affective states in work directly reflect person's attitude toward his/her job as a whole and mirror the quality of interrelations between the person and work environment (Brandstatter, 1991). In transactional model of subjective well-being of job satisfaction, a person's attitudes toward one's own job is called job-related subjective well-being. This subjective well-being includes two components: Affective evaluation expressing what people feel at the work place and cognitive evaluation of the job expressed in judgments (Zalesky, 2004).

Person-environment fit model (Kristof, 1996) propose that good fit between what employee wants or needs and what the organization or job actually supplies is expected to contributes to one's level of satisfaction.

Occupational stress has been found to be one of the major work-related health problems (Gray,

2000). In present post modern societies, employee stress costs companies over \$80 billion annually due to low job morale, lost productivity and health disability claims (Edwards & Rotherburd, 1999). Therefore, there have been accomplished interventions for alleviation of job stress. These interventions have multiplied rapidly over the last two decades, paralleling the increasing recognition and acceptance of the adverse impacts of job stress on individuals and organizations (Lamontagne, Keegel, Louie, Ostry, Landsbergis, 2007). For example Feuerstein, Nicholas, Huang, Dimberg, Ali & Rogers (2004) examined effects of ergonomics intervention and combined ergonomics and job stress intervention on job stress. Results indicated interventions don't decrease job stress. Zhai, Raver and Grining (2011) investigated impact of a classroom-based intervention, the Chicago School Readiness Project (CSRP), on teachers' perceived job stressors and confidence, as indexed by their perceptions of job control, job resources, job demands, and confidence in behavior management. They found that the CSRP had significant effect on the improvement of teachers' perceived job control and work-related resources. Isaksson, Gude, Tyssen and Aasland (2010) investigated effect of self-referral, counseling intervention on job burnout among Norway nurses. They found that emotional exhaustion was significantly reduced.

One of interventions for job stress is ACT. Bond & Bunce (2000) in a worksite stress reduction study examined effect of ACT on mental well-being and tendency to innovation. They compared an ACT stress protocol to a behaviorally-oriented innovation promotion program and to a waiting list control. They found that ACT significantly improved people's mental well-being and tendency to innovation.

Dahl, Wilson & Nilsson (2004) compared medical treatment as usual (MTAU) with brief acceptance and commitment therapy (ACT) in addition treatment design with medical treatment as usual (MTAU) for the treatment of chronic stress/pain of Swedish workers. They found that at post and 6-month follow up, ACT participants showed fewer sick days and used fewer medical treatment resources than those in the MTAU condition.

Flaxman and Bond (2010) compared acceptance and commitment therapy (ACT), stress inoculation training (SIT) and waitlist distressed working individuals in job stress. ACT and SIT were found to be equally effective in reducing psychological distress across a three month assessment period. Mediation analysis indicated that the beneficial impact of ACT on mental health resulted from an increase in psychological flexibility

rather than from a change in dysfunctional cognitive content.

Brinkborg, Michanek, Hesser and Berglund (2011) examined the effect of a brief stress management intervention based on the principles of Acceptance and Commitment Therapy (ACT) on stress and general mental health for Swedish social workers in a randomized, controlled trial. The results showed that the intervention significantly decreased levels of stress and burnout, and increased general mental health compared to a waiting list control. No statistically significant effects were, however, found for those with low levels of stress at baseline. Among participants with high stress, a substantial proportion (42%) reached criteria for clinically significant change. They concluded that the intervention successfully decreased stress and symptoms of burnout, and increased general mental health.

In Iran has used interventions for job stress and satisfaction. For example Hosseinian, Khodabakhshi Koolae and Tababtabae Yahya Abadi (2007) examined effectiveness of Fordyce's happiness cognitive-behavioral group counseling on occupational burnout among social workers of Razi psychiatric center in Tehran. They found that Fordyce's happiness cognitive-behavioral group counseling decreased job stress in one week and one month follow up.

Sadeghian, Abedi and Bagheban (2010) studied effect of job counseling based on narrative therapy on job satisfaction of education workers. They found that narrative therapy has effect on job satisfaction and its components.

Although, interventions for changing job stress and satisfaction has been done in Iran, but ACT hasn't used for this purpose. Therefore, this study has used ACT group instruction for changing job stress and satisfaction. Hypothesis of this study include :

Group ACT instruction decrease job stress in experimental group rather than control groups.

Group ACT instruction increase job satisfaction in experimental group rather than control groups.

2. Material and Methods

The current study used an semi-experimental design with control groups. Pretest, posttest and follow up data gathered for all groups.

Participants were 96 people from personnel of Islamic Azad University Azadshahr branch that assigned randomly to 3 groups (experimental, "let's talk" and control).

After selecting the sample, accomplished pretest measurements for them. Then, experimental group were instructed stress management with ACT

techniques based on Bond and Bunce (2000) model for 4 session 1.5 hours instruction. "Let's talk" control group exposed 4 session 1.5 hours materials irrelevant to ACT approach (materials about sports and nurture). Simple control group exposed any instruction. Then, posttest was accomplished. 3 month later experimental group pass 2 session 1.5 hours exercise for follow up and Let's talk control group pass 2 session 1.5 hours review the previous materials (irrelevant to ACT approach). Simple control group pass any sessions. In the end 3 groups completed the questionnaires for follow up.

Demographic data collected by demographic data sheet. These data include age, gender, socio-economic status and employment status.

Job stress: job stress was assessed by Occupational Role Questioner subscale from Osipow's Occupational Stress Inventory Revised Edition (OSI-R) (1978). The OSI-R is divided into three subscales: the Occupational Role Questionnaire (ORQ), the Personal Strain Questionnaire (PSQ), and the Personal Resources Questionnaire (PRQ).

The ORQ subscale measures the level of occupational stress, including Role overload, role insufficiency, role ambiguity, role boundary, responsibility and physical environment. A high score for role overload indicates an increased, unreasonable and unsupported work load; a high score for role insufficiency indicates a poor fit between the subject's skills and the job they are performing; a high score for role ambiguity indicates that the subject has an unclear sense of what they are expected to do; a high score for role boundary indicates that the subject feels caught between conflicting supervisory demands and factions; a high score for responsibility indicates high levels of responsibility for activities and work performance; and a high score for physical environment indicates high levels of noise, moisture, dust, heat, cold, light, poisonous substance or unpleasant odours, having an erratic work schedule or feeling personally isolated. This subscale include 60 item (each level measured by 10 item) that were rated by a 5-point Likert-type scale ranging from 1(never) to 5 (very often).

Reliability of this inventory with Chronbach's Alpha was 0.89 (Osipow, 1978). For standardization in Iran, the inventory translated to Persian and then translated to English by a translator again. In this study reliability with chronbach's Alpha was 0.84 (Azad Marzabadi, 2009).

Job satisfaction : job satisfaction was measured by an adopted version of Job Description Index (JDI) That was originally developed by Smith, Kendall and Hulin (1969). This instrument measures six indicators of personnel's job satisfaction include satisfaction with the work itself (22 items),

supervision (14 items), coworkers (11 items), promotion (7 items), pay (9 items) and working conditions (7 items). The instrument was rated into five point Likert scale include completely agree (1), somewhat agree (2), uncertain (3), somewhat disagree (4) and completely disagree (5).

Smith et al (1969) compared this instrument with other measurements of job satisfaction and found great validity for it. In Iran, Arshadi et al (1990) translated the instrument and applied for oil industry personnel. These researchers found correlation between this instrument and Queen-Ceiard job satisfaction questioner 0.66 (from 0.33 to 0.71 for subscales).

Reliability coefficient reported by Smith et al (1969) was 0.59 to 0.92. Kendall and Hulin (1972) reported reliability coefficient 0.62 to 0.93. In Iran Arshadi et al (1990) reported reliability coefficient 0.71 (0.73 to 0.85 for subscales).

3. Results

Demographic characteristics present at Table 1.

Table 1. Demographic characteristics of subjects

variable	Sub variables	frequency	percent
Gender	male	30	68.7
	female	66	31.3
age	25-29 years	13	13.4
	30-34 years	25	26.2
	35-39 years	27	28.3
	40-44 years	13	13.4
	45-49 years	7	7.3
Socio-economic status	50-55 years	11	11.4
	High	33	34.4
	Moderate	53	55.2
Employment status	low	10	10.4
	official	51	53.1
	contract	1	1
	Temporary contract	40	41.7
	corporate	4	4.2

Table 1 shows that 68.7 percent of subjects are male and 31.3 percent are female. Mean of age was 37.28 with standard deviation 7.23. 34.4 percent of subjects have high, 55.2 percent have moderate and 10.4 percent have low socio-economic status. Employment status were official for 53.1 percent, contract for 1 percent, temporary contract for 41.7 percent and corporate for 4.2 percent of subjects.

First hypothesis of research says group ACT instruction decrease job stress in experimental group rather than control groups. Table 2 shows mean and SD of groups in job stress and table 3 shows outcomes of analysis of variance for repeated measures in job stress subscales and total job stress.

Table 2. Mean and SD of groups in job stress

variable	group	pretest		posttest		Fallow up	
		M	SD	M	SD	M	SD
Work overload	Experimental	25.93	5.18	23.63	5.25	23.83	3.71
	Let's talk	26.30	5.91	27.24	6.12	26.91	5.28
	Control	28.15	6.43	28.48	5.06	26.58	3.98
Role insufficiently	Experimental	25.07	7.54	27.47	6.36	27.17	5.48
	Let's talk	27.06	8.05	27.30	7.18	27.67	6.83
	Control	25.18	7.86	26.72	7.35	26.67	7.17
Role ambiguity	Experimental	23.87	2.64	20.4	4.22	20.57	4.22
	Let's talk	23.94	4.79	23.15	5.30	23.73	4.16
	Control	24.88	5.22	25.64	6.26	25.67	5.19
Role boundary	Experimental	25.73	3.83	21.83	3.99	21.6	3.14
	Let's talk	23.85	5.61	25.15	5.73	24.85	4.85
	Control	26.85	6.40	25.54	6.09	25.37	4.9
responsibility	Experimental	27.27	4.008	22.7	3.72	22.83	3.13
	Let's talk	25.42	4.82	27.09	5.95	26.36	4.09
	Control	29.03	5.14	26.52	4.93	26.12	4.16
Physical environment	Experimental	19.97	8.41	20.33	7.65	20.62	8.40
	Let's talk	18.67	7.72	18.06	7.25	17.06	6.57
	Control	22.78	8.49	22.78	7.92	22.48	7.91
Total job stress	Experimental	153.47	12.01	130.43	15.85	132.37	12.14
	Let's talk	145.24	20.09	148.12	23.61	148.94	18.22
	Control	156.88	25.1	154.73	25.73	152.79	19.62

Table 3. Analysis of variance for repeated measures for job stress

variable	Source of variety	SS	DF	MS	F	P
Work overload	W overload	51.98	1.93	27.009	1.91	0.15
	W overload* group	131.07	3.85	34.05	2.6	0.04
	Between subject	530.78	2	295.39	4.63	0.012
Role insufficiently	R insufficiently	161.42	1.88	86.03	2.82	0.066
	R insufficiently*group	44.51	3.75	11.86	0.39	0.8
	Between subject	117.5	2	58.75	0.61	0.55
Role ambiguity	R ambiguity	71.85	2	35.92	2.75	0.047
	R ambiguity*group	190.80	4	47.70	3.65	0.007
	Between subject	674.62	2	337.31	7.89	0.001
Role boundary	R boundary	131.48	2	65.74	4.65	0.011
	R boundary*group	280.045	4	70.011	4.96	0.001
	Between subject	386.83	2	193.42	3.88	0.024
responsibility	responsibility	252.99	1.73	145.97	9.4	0.001
	responsibility*group	38.294	3.47	110	7.09	0.001
	Between subject	426.66	2	213.33	6.13	0.003
Physical environment	P environment	8.73	1.77	4.94	0.16	0.82
	P environment*group	42.60	3.53	12.06	0.4	0.79
	Between subject	1120.42	2	560.21	4.31	0.016
Total job stress	job stress	3407.19	1.96	1734.42	10.51	0.001
	job stress*group	7324.78	3.93	1864.32	11.30	0.001
	Between subject	12137.59	2	606.79	6.92	0.002

Table 3 shows that in work overload, role ambiguity, role boundary and responsibility subscales and total work stress are significant interactions between variables and groups but in role insufficiently and physical environment subscales are not. In other words, ACT instruction reduced stress

related to work overload, role ambiguity, role boundary and responsibility subscales and total work stress and didn't reduce stress related to insufficiently and physical environment subscales.

Second hypothesis says group ACT instruction increase job satisfaction in experimental

group rather than control groups. Table 4 shows mean and SD of groups in job satisfaction and table 5

shows outcomes of analysis of variance for repeated measures in job stress.

Table 4. Mean and SD of groups in job satisfaction

Variable	group	pretest		posttest		Fallow up	
		M	SD	M	SD	M	SD
Work itself	Experimental	72.63	12.47	80.43	12.36	80.90	13.84
	Let's talk	76.97	12.78	75.12	13.49	73.33	10.68
	Control	72.97	14.68	74.39	16.71	76.97	18.38
supervision	Experimental	53.1	11.60	54.73	11.39	55.07	11.68
	Let's talk	56.39	10.64	53.94	13.33	54.67	11.52
	Control	54.36	11.45	50.06	12.47	51.61	13.20
coworkers	Experimental	43.1	9.17	41.5	10.7	39.17	10.18
	Let's talk	41.18	8.6	39.12	10.66	38.03	8.1
	Control	39.09	12.04	39.06	10.16	39.67	10.19
promotion	Experimental	19.43	8.09	20.9	7.72	22.13	7.01
	Let's talk	19.45	7.61	17.88	7.02	20.12	7.23
	Control	17.82	7.79	20.79	8.6	21.09	8.64
pay	Experimental	22.57	7.02	24.07	7.69	28.43	6.64
	Let's talk	19.7	7.04	17.84	5.5	21.76	7.49
	Control	22.45	6.24	25.51	9.37	25.36	8.31
Working conditions	Experimental	22.5	7.14	23.2	6.16	26.23	7.14
	Let's talk	23.73	7.18	22.36	6.72	22.64	6.28
	Control	23.85	6.26	24.48	7.1	26.27	7.26
Total job satisfaction	Experimental	228.17	33.11	252.37	34.66	261.47	34.23
	Let's talk	237.42	37.61	227.64	41.37	230.88	36.58
	Control	230.55	41.18	232.58	48.69	240.79	53.5

Table 5. analysis of variance for repeated measures in job satisfaction

variable	Source of variety	SS	DF	MS	F	P
Work itself	Work itself	462.92	2	231.46	3.34	0.04
	Work itself* group	1375.12	4	343.78	4.96	0.001
	Between subject	574.35	2	287.17	0.62	0.54
supervision	supervision	139.77	1.82	76.62	1.27	0.28
	supervision *group	327.26	3.65	89.07	1.49	0.21
	Between subject	481.61	2	240.8	0.75	0.47
coworkers	coworkers	226.86	1.86	12.95	3.14	0.048
	coworkers *group	195.20	3.72	52.47	1.34	0.26
	Between subject	224.12	2	112.06	0.48	0.62
promotion	promotion	236.12	2	118.06	4.12	0.018
	promotion *group	179.43	4	44.86	1.57	0.18
	Between subject	131.74	2	65.87	0.53	0.59
pay	pay	676.98	1.93	351.71	12.72	0.0001
	pay*group	353.78	3.85	91.92	3.33	0.013
	Between subject	1608.86	2	804.43	7.41	0.001
Working conditions	Working conditions	183.17	1.9	96.47	5.04	0.008
	W conditions *group	202.6	2.8	53.35	2.8	0.03
	Between subject	190.57	2	95.25	0.92	0.4
Total job satisfaction	job satisfaction	7315.42	1.82	4012.89	7.009	0.002
	job satisfaction *group	14753.42	3.65	4046.52	7.07	0.0001
	Between subject	12520.63	2	6260.31	2.58	0.021

Table 5 shows that in work itself, pay, work conditions subscales and total job satisfaction interaction with group is significant, but in

supervision, coworkers and promotion subscales isn't. In other word, ACT instruction increased satisfaction about work itself, pay and work

conditions subscales and total job satisfaction and didn't increase satisfaction about supervision,

4. Discussions

First hypothesis of research addresses to effect of group ACT instruction on job stress. Results show that group ACT instruction reduces some subscales of job stress. This result is congruent with Bond and Bunce (2000), Dahl et al (2004), Flaxman and Bond (2010) and Brinkborg et al (2011).

Group ACT instruction could reduce work overload. Work overload is occur when job demands are beyond individual's ability, time and energy. According to Karasek et al (1998) high demands and low control are associated with high levels of psychological strain. In overload happen such thing. Work overload lead to individual pay attention to work enormously and don't pay attention to him/her. In this situation ACT by self-observation (Bond and Bunce, 2004) technique help him/her to pay attention to him/her and experience higher control and consequently experience lower stress. Also, inattentiveness maybe leads to higher rate of negative thought and experiential avoidance (Harris, 2006) and consequently higher stress. Private experiences (thought) acceptance in ACT help individual accept his/her negative thoughts and experience lower stress. Furthermore, ACT by creating higher psychological flexibility (Hayes, 2004) leads to worker cope with stress better than beforehand.

According to results, role ambiguity also leads to job stress. Conway, Vickers and French (1992) based on previous researches create person-environment fit and believe that role ambiguity is one of detrimental factors for job stress. ACT by creating the psychological flexibility (Hayes et al, 2004) help individual to cope with ambiguous and contradictory expectations. Furthermore, defusion from roles and self-observation (Bond and Hayes, 2004) helps to decrease stress.

Role boundary is other component of job stress that ACT instruction decreases it. When there isn't boundaries between different roles of individuals, he/she may experience stress. ACT instruction maybe by self-observation (Bond and Hayes, 2004) leads to integration. Furthermore, determining the goals and commitment to them (Harris, 2006) leads to lower stress.

Responsibility is one of components of job stress (Conway et al, 1992). According to results of this research, ACT instruction decrease stress related to responsibility. Maybe this work doing by psychological flexibility, acceptance private events (thoughts and emotions) (Hayes et al, 2004) and dividing responsibilities.

coworkers and promotion subscales.

According to results of this research ACT instruction didn't decrease role insufficiently. There are several reasons for it: a) Maybe individuals reported low insufficiently because of self-enhancement. b) Individuals don't accept their insufficiency, what ACT emphasized on it. c) Many of insufficiency components such as academic status are objective, but ACT decrease subjective issues.

ACT didn't change physical environment subscale. One reason for this outcome is that physical environment is an objective factor. Also, maybe physical environment were a suitable environment and don't need to change.

Totally, ACT change job stress by increasing psychological flexibility, change in perceptions, acceptance thoughts and feelings, decreasing experiential avoidance, self-observation, defusion from roles and characteristics, recreating values and commitment for meet them (Hayes et al, 2004; Hayes et al, 2006; Hayes et al, 2003).

Second hypothesis of this research address to ACT effect on job satisfaction. Results show that ACT increased satisfaction with work itself, pay and working conditions subscale and total job satisfaction and didn't change satisfaction with supervisors, coworkers and promotion subscales. Previous research about this outcomes was not found.

Satisfaction with work itself is a subjective issue. So, ACT increased it by acceptance self and job characteristics and commitment to values (Hayes, et al, 2004).

Satisfaction with pay increased by ACT. Pay is an objective issue but it's appropriateness with efforts is a subjective issues. Therefore, ACT changed it. Mindfulness in ACT (Hayes et al, 2004) leads to integration view to salary and other liberties and increase satisfaction. In addition, pay depend on perceptions and expectations (Shelly & Nasser, 2003) and these factors change by ACT.

Working conditions are perceptive factors. When these perceptions and mentalities were change, satisfaction change too (French and Caplan, 1973). ACT by changing in perception changed satisfaction with working conditions.

ACT didn't change in satisfaction with supervisors and coworkers subscales. There are reasons about this: first, maybe satisfaction with supervisors and coworkers were high and don't need to increase it. Second, maybe individuals cannot display dissatisfaction with supervisors and coworkers because of fear of admonition.

Satisfaction with promotion did not change by ACT. Maybe, for overtly discriminatory promotion is an objective issue. In addition,

satisfaction with promotion were high and do not need to change.

Total job satisfaction was increased by ACT. Job satisfaction is a mainly subjective and perceptive factor (Shelly & Nasser, 2003) and depend on person's attitudes to job (French and Caplan, 1972). ACT by creating psychological flexibility (Hayes et al, 2004) increase job satisfaction. Also, ACT by acceptance thoughts and feelings and defining values and commitment to meet them (Hayes et al, 2003) contributed to job satisfaction. In addition, between job stress and job satisfaction is a reversal relationship (Lee & Shin, 2010; Judge, Ilios & Zhang, 2012). Therefore, along with decreasing job stress, job satisfaction increase.

This research has limitations. First, although researcher motivated the subject to do the task at home, maybe some of them did not do the tasks. Second this research didn't address to mechanisms of ACT who influence on job stress and satisfaction. Third, this study didn't compare the ACT intervention with other interventions.

Future research can pay attention to these limitations and concentrate on mechanism of ACT influence on job subjects such as job stress and satisfaction and compare ACT with other interventions.

Acknowledgements:

Authors thanks and Acknowledged the Islamic Azad University- Azadshahr branch personnel for their cooperation.

Corresponding Author:

Ali Hosseinaei Department of Psychology, Science and Research Branch, Islamic Azad University, Khuzestan, I.R. Iran.a

E-mail: hosseinaiyf@yahoo.com

a_hosseinaei@iauaz.ac.ir

References

1. Ahsan N, Abdullah z, Gun Fie DY, Alam SH. A study of job stress on job satisfaction among university staff in Malaysia : Empirical study. *European Journal of Social Science*, 2009;8(1):121-131.
2. Arshadi N. Relationship between stress of role conflict and ambiguity and job performance and satisfaction among managers and workers of national oil cooperative of Iran in regard to mediating effects of job autonomy and continuity. MA Dissertation of Shahid Chamran University of Ahwaz, 1990:95-97.
3. Azad Marzabadi E. Osipow's Job Stress Inventory- Revised edition. Tehran: Azmoonyare Pooya Association, 2009:4-5.
4. Bach PB, Hayes SC. The use of acceptance and commitment therapy to present the rehospitalization psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 2002;70:1129-1139.
5. Blegen MA. Nurse's job satisfaction: A meta-analysis of related variables. *Nursing Research*, 1993;42(1): 36 - 41.
6. Block JA. Acceptance or change of private experiences: A comparative analysis in college students with public speaking anxiety. Doctoral Dissertation, University of Albany, State University on New York, 2002:35-65 .
7. Bond FW, Bunce D. Mediators of change in emotion- focused and problem- focused worksite stress management intervention. *Journal of Occupational Health Psychology*, 2000;5:156-163.
8. Bond FW, Hayes SC. Act at work. in Bond F, Dryden W (Eds). *Handbook of brief cognitive behavior therapy*. West Sussex: John Wiley & Sons Ltd, 2004:117-139.
9. Brandstatter H. Emotions in everyday life situations, time sampling of subjective experience. In Stark F, Argyle M, Schwarz N. (Eds). *Subjective well-being: An interdisciplinary perspective*. Oxford: Pergamon Press, 1991:173-192.
10. Brinkborg H, Michanek J, Hesser H, Berklund G. Acceptance and commitment therapy for the treatment of stress among social workers: A randomized control trial. *Behavior Research and Therapy*, 2011;49:389-398.
11. Caplan RD, Cobb S, French JRP, Harrison RV, Pinneau SR. Job demands and worker health. Washington DC: HEW Pub, No (NIOSH), 1975:75-106.
12. Conway TL, Vickers RR, French JRP. An application of the person-environment Fit theory: perceived versus desired control. *Journal of Social Issues*, 1992;48:95-107.
13. Dahl J, Wilson KG, Nilsson A. Acceptance and commitment therapy and treatment of persons at risk for long -term disability resulting from stress and pain symptoms: A preliminary randomized trial. *Behavior Therapy*, 2004;35:785-801.
14. Edwards JR, Rothburd NP. Work and family stress and well-being, an examination of person-environment fit in the work and

- family domains. *Organizational Behavior and Human Decision Processes*, 1999;77:85-129.
15. Feuerstien M, Nicholas RA, Huang G, Dimberg L, Ali D, Rogers H. Job stress management and ergonomic intervention for work-related upper extremity symptoms. *Applied Ergonomics*, 2004;35:565-574.
 16. Flaxman PE, Bond FW. A randomized worksite comparison of acceptance and commitment therapy and stress inoculation training. *Behavior Research and Therapy*, 2010;48:816-820.
 17. French JRP, Caplan RD. Organizational stress and individual strain. In Morrow, AJ (Ed). *The failure of success*. New York: AMACOM, 1972:30-66.
 18. Furnham A, Petrides KV, Jackson CJ, Cotter T. Do personality factors predicted job satisfaction? *Personality and Individual Differences*, 2002;33:1325-1342.
 19. Gray P. *Mental Health in the Workplace: Tackling the Effects of Stress*. Mental Health Foundation, London 2000:75-92.
 20. Gratz KL, Gunderson JG. Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among woman with borderline personality disorder. *Behavior Therapy*, 2006;37(1):25-35.
 21. Gregg JA. A randomized controlled effectiveness trial comparing patient education with and without acceptance and commitment therapy. Doctoral Dissertation, University of Nevada, Reno, 2004:33-45.
 22. Harris R. Embracing your demons: An overview of acceptance and commitment therapy. *Psychotherapy in Australia*, 2006;21(4):2-8.
 23. Hayes SC, Masuda, AT, De May H. Acceptance and commitment therapy and the third wave of behavior therapy. *Gedragstherapie (Dutch Journal of Behavior Therapy)*, 2003;2:69-96.
 24. Hayes SC, Hayes LJ, Reese HW. Finding the philosophical core: A review of Stephan C. Pepper's World Hypothesis. *Journal of Experimental Analysis of Behavior*, 1988;50:97-111.
 25. Hayes SC, Hayes LJ, Reese HW, Sarbin TR. Varieties of scientific contextualism. Reno, NV: Context Press. 1993:35-47.
 26. Hayes SC, Bissett R, Roget N, Padilla M, Kohlenberg BS, Fischer S, et al. The impact of acceptance and commitment training on stigmatizing attitudes and professional burnout of substance abuse counselors. *Behavior Therapy*, 2004;35:821-836.
 27. Hayes SC. Acceptance and commitment therapy and the new behavior therapies, mindfulness, acceptance and relationship. In *Mindfulness and Acceptance: Expanding the Cognitive- Behavioral Tradition*. By Hayes SC, Follette VM, Linehan MM. (Eds). New York: Guilford Press. 2004:43-65.
 28. Hayes SC, Lauma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: Model, processes and outcomes. *Behavior Research and Therapy*, 2006;44:1-25.
 29. Health and Safety Executive. Tackling stress: The management standard approach. <Http://www.hse.gov.uk/pubns/indg406.pdf>. 1 January, 2011.
 30. Hosseinian S, Khodabakhshi Koolae A, Tababtabaee Yahya Abadi S. Study on effectiveness of Fordyce's happiness cognitive-behavioral group counseling on decreasing occupational burnout among social workers. *Psychological Studies*, 2007;3(1):103-115.
 31. Isaksson KE, Gude T, Tyssen R, Aasland OC. A self-referral preventive intervention for burnout among nurses: One year follow up study. *Patients Education and Counseling*, 2010;78:191-197.
 32. Judge TA, Ilies R, Zhang Z. Genetic influences on core self-evaluations, job satisfaction and work stress: A behavioral genetics mediated model. *Organizational Behavior and Human Decision Processes*, 2012;117:208-220.
 33. Karasek R, Brisson C, Kawakami N, Houtman I, Bongers P, Amick B. The Job Content Questionnaire (JCD): An instrument for internationally comparative assessment of psycho-social job characteristics. *Journal of Occupational Health Psychology*, 1998;3:322-355.
 34. Kristof AL. Person-organization fit: An integration review of its conceptualizations, measurement and implication. *Personnel Psychology*, 1996;49: 1-49.
 35. Lamontagne AD, Keegle T, Louie AM, Ostry A, Landsbergis PA. A systematic review of job stress intervention evaluation literature 1990-2005. *International Journal of Occupational Environmental Health*, 2007;13:268-270.
 36. Lazarus RS, Folkman S. *Stress, appraisal and coping*. New York: Springer Publishing. 1985:45-78.

37. Lee Y, Shin S. Job stress evaluation using response surface data mining. *International Journal of Industrial Ergonomics*, 2010;40:379-385.
38. Locke EA. The nature and causes of job satisfaction. In M. D. Dunnette (Ed.). *Handbook of industrial and organizational psychology* Chicago: Rand McNally. 1976:1297-1349.
39. Lundgren T, Dahl J. Development and evaluation of an integrative health model in treatment of epilepsy: A randomized controlled trial investigating the effects of a short-term ACT intervention Compared to attention control in South Africa. Chicago: Association for Behavior Analysis. 2005:23-35.
40. Mccrackn LM, Vowels KE, Eccleston C. Acceptance-based treatment for persons with complex, long-standing chronic pain : A preliminary analysis of treatment outcome in comparison to a waiting phase. *Behavior Research and Therapy*, 2005;48(2):141-146.
41. Mojinyinola JK. Effects of job stress on health, personal and work behavior of nurses in public hospitals in ibadan metropolis, Nigeria. *Ethno Med*, 2008;2(2):143-148.9
42. National Institute for Occupational Safety and Health (NIOSH). *Stress at work* . Centers for disease control and prevention. United States: Department of Health and Human Services Publication, 1999:99-101.
43. Osipow SH. *Occupational Stress Inventory Revised Edition (OSI-R) professional manual*. Odessa, Fla : Psychological Assessment Resources, Inc. 1998:12-27.
44. Osipow SH, Spokane AR. *Manual for occupational stress inventory: Research version*. Odessa, FL: Psychological Assessment Resources. 1987:46-67.
45. Sadeghian A, Abedi MR, Baghban I. Effect of career narrative therapy on job satisfaction and self-esteem among Education workers of Jarghoie of Isfahan. *New Educational Ideas*, 2010;6(3):115-138.
46. Selye H. *The stress of life*. New York: Mc Graw-Hill. 1976:65-78.
47. Smith PC, Kendall LM, Hulin CL. *The measurement of satisfaction in work and retirement*. Chicago, IL: Rand McNally. 1969:22-37.
48. Shelly GH, Nasser L. Teacher reaction, job satisfaction in a year-round school. *Journal of Educational Leadership*, 2003;60: 65-89.
49. Twohig MP, Woods OW. A preliminary investigation of acceptance and commitment therapy and habit reversal as treatment for trichotillomania. *Behavior Therapy* , 2004;35(4):803- 820.
50. Vagg PR, Spielberger CD. Occupational stress: Measuring job pressure and organizational support in the workplace. *Journal of Occupational Health Psychology*, 1998;3:294-305.
51. Zalewska A. Transzctional model of subjective well-being. *Polish Psychological Bulletin*, 2004;35:45-54.
52. zettle RD. Acceptance and commitment therapy (ACT) versus systematic desensitization in the treatment of mathematics anxiety. *The Psychological Record* , 2003;53:197-215.
53. Zettle RD, Hayes SC. Dysfunctional control by client verbal behavior: The context of reason giving. *The Analysis of Verbal Behavior*, 1986;4:30-38.
54. Zettle RD, Rains JC. Group cognitive and contextual therapies in treatment of depression. *Journal of Clinical Psychology*, 1989;45(3):436-445.
55. Zhai F, Raver CC, Li-Grining C. Classroom-based interventions and teachers perceived job stressors and confidence: Evidence from a randomized Trial in Head start settings. *Early Childhood Research Quarterly*, 2011;26:442-452.

12/16/2012