

Type-A Personality and Job Satisfaction: Two Scales for Job Stress and Health Psychology Research

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SUMMARY

Purpose: The purpose of the present study is to obtain the reliability and validity information on two scales, Type-A Personality and Job Satisfaction, developed to be used in studies on work stress.

Method: The data were collected from two different samples, one composed of individuals working in public and private banks (N= 426), the other from those working in the distribution department of a private firm (N= 94). For both samples, the Stress Symptoms and Vulnerability to Stress subscales of the Stress Audit were used. along with Ways of Coping Inventory, Job-Satisfaction and Type-A Personality Scales.

Findings: The factor analyses conducted on the two scales, revealed 4 factors for the Type-A Personality Scale, and 6 factors for the Job Satisfaction Scale. The factor-based subscales were found to have Cronbach's alpha's ranging between .40 and .90 for the Type-A Personality Scale and between .53 and .94 for the Job Satisfaction sub-scales. In addition to the Cronbach's alpha's, criterion validity values were also obtained.

Result: The analyses conducted showed both scales to have satisfactory reliability and validity coefficients.

Key Words: Stress, Job satisfaction, Type-A personality

INTRODUCTION

In recent years, research on job stress have been focusing on the relationship between stress factors in the work place, and health (Jain et. al.,1996, Cushway et. al., 1996, Keen 1999, Vries and Wilkerson 2003), productivity (Motowidlo et.al., 1986, Cooper et. al., 1989) and job satisfaction (Alshammari et. al.,1996, Ramirez et. al.,1996).

Job satisfaction is defined as a persons general attitude towards his/her work (Robbins 1999). The physical (noise level, amount of fresh air, lighting, crowdedness, etc.), personal (responsibility level, work load, amount of role ambiguity, etc.), interpersonal (relations with colleagues and with those high in hierarchy, etc.), and organizational factors in the work place (ambiguities, organizational policies, too much or too little structure), were found to be correlated to increases and decreases in job satisfaction (Archer et.al., 1991, Abramis 1994, AbuAlRub 2004). Decreases in job satisfaction along with negative life events in a persons life, daily hassles and certain personality qualities, are generally correlated with subjective feelings such as depression, anxiety, fatigue, and with physiological problems such as immunity system problems, increases in colds, allergic reactions, gastrointestinal illness and substance abuse (Beehr and Newman 1978, Dua 1996). Reflections of these problems on job performance generally lead to decreases in job performance, empathy and concentration, increases in mistakes, increases in interpersonal conflicts and insensitivities, increases in sick leaves, and tardiness (Patterson et.al., 1995, Matrunola 1996).

* In this study analyses regarding the sociodemographic variables were also conducted and findings consistent with the related literature were found. However, due to space limitations, they are not reported here. For those researchers who are interested, these results can be supplied by the authors.

The frequency and intensity of stressful events are related to the interaction of the organizational conditions and the personality of the individual. The stressful events are more intense in some jobs than others and they are experienced more intensely by some individuals than others (Motowidlo et.al., 1986, Jung 1999, Vries and Wilkerson 2003). For example, the relationship between Type-A personality characteristics and cardiovascular problems and stress is one of the issues most frequently mentioned in the literature (Keenan and McBain 1979, Howard et.al., 1986, Dembroski and Costa 1987, Jung 1999, Al-Mashaan 2001, Kojima et.al., 2004). This concept was developed after a study conducted by Friedman and Rosenman (1974), investigating the relationship between certain behavioral characteristics and heart attacks. The researchers who were also heart specialists, specified certain common behavioral characteristics in their patients, and named these as Type-A Behaviors. Type-A behaviors are generally seen in individuals who race with time and who are led by success. They work fast, talk fast; try to do several things at once. They are impatient and angry. Since they can not bear to wait, they tend to interrupt the conversation; they try to lead all of their interpersonal interactions. Type A's use "quantity" (Money, achievements, responsibilities, etc.) as an indication of their success and they value quantity rather than quality (Mueser et.al., 1987, Bluen et.al., 1990). They are highly competitive (Keenan and McBain 1979, Powell 1995).

Those who have the opposite characteristics are specified as Type-B's. Type-B's are said to be more comfortable, more easygoing, less competitive and less aggressive, Lazarus (1994), stated that type-B's also experience stress, however, they are less panicky when they are faced with challenges and threats. Moreover, they differ from the Type-A's in terms of their blood pressure and other biochemical reactions (Howard et.al., 1986).

Due to their vulnerability to coronary problems and experienced difficulties in job satisfaction, it is important to select those who exhibit these Type-A behaviors. Since 1960, more than 20 scales to assess Type-A behaviors were developed. Among them, the Jenkins Activity Survey (JAS), Framingham Type-A Scale (FTAB), Bortner Rating Scale (BRS) and Videotaped Structured Interview (VSI) were found to have satisfactory reliability and validity values (Powell 1995). The findings of studies

which have used these or similar instruments revealed that those who have Type-A characteristics are success oriented, assume extra responsibilities, perceive events as more stressful, experience panic reactions very often, have a hard time to concentrate on their work, exhibit aggressive behaviors in interpersonal interactions, and consequently experience decreased performance and decreased job satisfaction (Motowidlo et.al., 1986, Jung 1999, Jamal and Baba 2001, AbuAlRub 2004).

On the other hand, job satisfaction was initially measured through interviews with open ended questions. Later, due to the multi-dimensional nature of the variable, standardized assessment instruments were developed. Among those which are used most frequently, "Job Description Scale" (Ergin 1987) and "Minnesota Satisfaction Inventory" (Dandy and Kirby, 1994) are mentioned. Which ever instrument is used, the studies have shown that several factors in the work place (individual, physical, interpersonal, and institutional, etc.) are closely related to job satisfaction (Ramirez et.al, 1996, Matrunola 1996, Rout et.al., 1996, AbuAlRub 2004).

When we take a look at the studies conducted in Turkey on Type-A behaviors, a study on 184 mid-level managers catches our attention. This study aimed to investigate the relationship between stress and Type-A's and Type-B's, using a 220 item inventory developed by the researcher.

A very strong negative relationship was found between stress and job-satisfaction, however, no relationship was observed between stress and Type-A or Type-B behaviors. No information could be attained regarding the details of the assessment instrument (Köse 1984). On the other hand, regarding job-satisfaction, Ergin (1997), reports information on the adaptation procedure and the reliability and validity values of the Job Description Scale. She mentions that since the instrument is easily applicable even to those with little education and takes a very short time, it is used on a wide scale.

As it is seen, even though the issues of job-satisfaction and Type-A behaviors are investigated thoroughly in western countries, there are very few studies in Turkey. Especially when we take into consideration the findings related to the direct interaction effect of both the institutional factors and the personality of the individual (mainly being Type-A), on the satisfaction felt in the workplace,

Table 1. Factor structure of the Type-A Personality Scale

Factor 1: Importance attributed to work		I	II	III	IV
Total variance explained: 23.8 %, Eigenvalue: 5.96					
7-	Being preoccupied with ones own problems while witting for someone else	.66			
21-	Interrupting others often while they are doing their own work	.61			
6-	Becoming angry when stuck in traffic or when waiting for service at a restaurant	.60			
10-	Diverting the flow of the conversation towards what you are intersted in	.58			
16-	Clenching your fists or pounding the table in order to emphasize what you are saying	.56			
5-	Behaving impatiently and hoping people would say what they want to say concisely and quickly.	.54			
20-	During games insisting on winning rather than having fun	.52			
8-	Doing several things at one (Ex: Shaving or drying hair while eat ing)	.42			
24-	Being in a hurry (Feeling compelled to finish everything and as soon as possible)	.34			
2-	Walk or eat fast	.32			
25-	Being unsatisfied by your current work performance	.31			
23-	Going back to work as soon as you finish eating	.31			
Factor II. Moving away from social activities					
Total variance explained: 8.7 %, Eigenvalue: 2.17					
13-	Instead of spending some time to develop your creativity and your social interactions, feeling you need to work and produce more		.75		
12-	Being so submersed in work, not to notice the furnishing in your work place or the scenery out of your window		.71		
9-	Spending your holidays to catch up with your work		.60		
11-	Feeling guilty when you use some of your time only to relax		.60		
Factor III. Importance attributed to speed					
Total variance explained: 6.9%, Eigenvalue: 1.72					
19-	Constantly trying to find other, quicker and more effective ways to complete the work you are doing.			.74	
17-	Attributing your success to your ability to work fast			.68	
18-	Feeling an urge to do your duties immediately and quickly			.67	
1-	Emphasizing some words more than others while talking			.49	
3-	Believing children should be raised competitively			.48	
14-	Making plans to do more things in a shorter time span			.39	
Factor IV. Importance attributed to timing					
Total variance explained: 5.3%, Eigenvalue: 1.32					
15-	Being always on time for your appointments				.60
22-	Being uncomfortable when others are late				.55
4-	Feeling uncomfortable near someone who works slowly				.41

it would be logical to approach the topic through a triad of stress-job satisfaction-Type-A personality. The purpose of the current study is to present the validity and reliability findings regarding two

scales, Type-A Personality Scale and Job Satisfaction Scale, which can be used by researchers investigating stress in the work place.

Table 2. Intercorrelations: Type-A Personality Scale and Stress Symptoms and Vulnerability to Stress Scales.

	Type-A Personality Total score	Importance attributed to work	Moving away from social activities	Importance attributed to speed	Importance attributed to timing
Stress Symptoms Total Scale	.27** (.43**)	.31** (.52**)	.21** (.20**)	.09 (.09)	.07 (.15)
Muscular system	.29** (.30**)	.31** (.35**)	.24** (.15)	.12** (.02)	.09 (.08)
Parasympathetic system	.25** (.34**)	.25** (.38**)	.22** (.15**)	.12** (.12)	.07 (.11)
Sympathetic system	.25** (.28**)	.25** (.35**)	.17** (.12)	.11 (.10)	.11 (.09)
Emotional system	.26** (.41**)	.34** (.52**)	.17** (.13)	.06 (.05)	.04 (.16)
Cognitive system	.22** (.44**)	.27** (.58**)	.16** (.22**)	.04 (.04)	.04 (.13)
Endocrine system	.19** (.40**)	.21** (.47**)	.17** (.19)	.05 (.09)	.04 (.15)
Immunity system	.17** (.37**)	.20** (.38**)	.14** (.21**)	.04 (.11)	.01 (.19)
Vulnerability to stress Total Scale	.24** (.34)	.29** (.41**)	.30** (.34**)	.03 (-.09)	.01 (-.07)
Being open to social support	.19** (.30**)	.20** (.35**)	.26** (.29**)	.07 (.03)	.03 (.03)
Saving some time for oneself	.16* (.16)	.17** (.25**)	.25** (.24**)	.01 (-.28**)	.02 (-.07)
Activities towards the body.	.23** (.30**)	.28** (.33**)	.18** (.25**)	.07 (.08)	.02 (.06)
Ways of Coping Inventory Total Scale	-.27** -.10	-.23** (-.40**)	-.12* (-.22**)	.19** (.17**)	.09 (-.09)
Self confident style	.12* (.05)	-.01 (-.11)	.05 (-.06)	.30** (.33**)	.17** (.04)
Optimistic style	-.17** (-.07)	-.30** (-.23**)	-.09 (-.12)	.13* (.26**)	.03 (.04)
Helpless style	.21** (.44**)	.32** (.51**)	.21** (.31**)	-.08 (.03)	-.04 (.13)
Submissive style	-.01 (.41**)	.07 (.45**)	.02 (.22**)	-.13* (.12)	-.06 (.16)
Searching for social support	-.05 (.18)	-.01 (.21**)	-.12* (.14)	-.02 (.17)	-.03 (.04)

* P < .01

** p < .001

Job Satisfaction Scale is a 32 item Likert inventory developed by the researchers. The items were specified after a thorough search of the related literature and several scales measuring the same

variable. These 32 items, supposedly to represent different aspects of a work place, ask the respondents to evaluate their satisfaction regarding a specific aspect, on a scale of 0% to 100%. The scoring

Table 3. Factor structure of the Job Satisfaction Scale

	I	II	III	IV	V	VI
Factor I. Organizational policies						
Total variance explained: 38.1%, Eigenvalue: 12.21						
6- The management style of my superiors	.79					
15- The way my performance is evaluated at my work place	.79					
4- The managerial structure of my work place	.76					
19- The way decisions are made regarding issues directly concerning the workers	.75					
11- The way the management approaches to solving my problems at work	.75					
3- The organizational policies and processes at my work	.73					
13- The clarity of the conditions for moving towards upper positions at my work	.72					
14- The clarity of job descriptions	.72					
18- The attitude of the management towards the personnel	.71					
2- The opportunities for moving towards moving upwards	.66					
17- The way expectations from me are presented	.67					
5- The in-job training programs	.61					
29- The feedback given about my performance	.59					
7- My share of contributing to the decisions and policies at work	.57					
8- The size of the group I work with	.46					
Factor II. Individual factors						
Total variance explained: 7.2%, Eigenvalue: 2.31						
30- The fact that the work I do matches my abilities		.80				
31- The fact that the work I do matches my training		.78				
32- The fact that the work I do matches my personality		.77				
12- The scope of my work		.66				
21- Degree of variety in the work I do		.60				
Factor III. Physical conditions						
Total variance explained: 6.1%, Eigenvalue: 1.94						
25- The orderliness and cleanliness at my work place						
10- The physical conditions of my work place						
26- The technological opportunities at my work place						
24- The noise level at my work place						
Factor IV. Control/autonomy						
Total variance explained: 4.2%, Eigenvalue: 1.34						
28- The level of responsibility given to me while doing my work						
27- The degree of freedom given to me while doing my work						
20- The amount of control I have over my work						
Factor V: Pay						
Total variance explained: 4.1%, Eigenvalue: 1.31						
1- The amount of payment I get for the work I do						
16- The bonus or premium opportunities at my work place						
Factor VI: Interpersonal relations						
Total variance explained: 3.4%, Eigenvalue: 1.08						
9- My relations with my colleagues						
22- The communication styles between people at my work place						
23- The working hours at my work place						

Table 4. Intercorrelations: Job Satisfaction Scale and Stress Symptoms and Vulnerability to Stress Scales.

	Job Satisfaction Total	Organizational policies	Individual factors	Physical conditions	Control/ autonomy	Pay	Inter- personal relations
Stress Symptoms Total Scale	-.29** (-.33**)	-.28** (-.30**)	-.20** (-.28**)	-.22** (-.15)	-.20** (-.21*)	-.10 (-.18)	-.35** (-.24*)
Muscular system	-.31** (-.25**)	-.25** (-.21**)	-.04 (-.25**)	-.29** (-.14)	-.38** (-.22**)	.08 (-.13)	-.41** (-.20)
Parasympathetic system	-.25** (-.27**)	-.28** (-.27**)	-.13* (-.25**)	-.40** (-.03)	-.38** (-.16)	-.17* (-.15)	-.43** (-.22**)
Sympathetic system	-.31** (-.23**)	-.28** (-.21**)	-.15* (-.24**)	-.34** (-.11)	-.35** (-.21**)	.06 (-.04)	-.38** (-.16)
Emotional system	-.21** (-.37**)	-.19* (-.32**)	-.17* (-.32**)	-.28** (-.20)	-.29** (-.27**)	.06 (-.33**)	-.42** (-.33**)
Cognitive system	-.17** (-.29**)	-.23** (-.24**)	-.25** (-.22**)	-.22* (-.17)	-.05 (-.22)	.05 (-.24**)	-.04 (-.23**)
Endocrine system	-.15** (-.22**)	-.04 (-.26**)	-.07 (-.13)	-.23** (-.05)	-.27** (.02)	-.16* (-.03)	-.33** (-.09)
Immunity system	-.17** (-.24**)	-.20** (-.25**)	-.19** (-.16)	.01 (-.10)	-.11* (.09)	-.01 (-.05)	-.11* (-.09)
Vulnerability to stress Total Scale	-.13* (-.33**)	-.14* (-.31**)	-.11 (-.21*)	-.06 (-.23**)	-.09 (-.23**)	-.10 (-.10)	-.23** (-.17)
Being open to social support	-.12** (-.30**)	-.11* (-.29**)	-.12* (-.17)	-.06 (-.22**)	-.09 (-.21**)	-.11** (-.07)	-.20** (-.07)
Saving some time for oneself	-.14** (-.22**)	-.17** (-.23**)	-.15** (-.22**)	-.03 (-.06)	-.08 (-.13)	-.09 (-.14)	-.22** (-.14)
Activities towards the body.	-.04 (-.25**)	-.06 (-.21**)	.01 (-.21**)	-.06 (-.25**)	-.06 (-.19)	.03 (-.07)	-.08 (-.20)
Ways of Coping Inventory Total Scale	.20** (.32**)	.26** (.31**)	.24** (.13)	.13* (.10)	.21** (.29**)	.19** (.36**)	.29** (.29**)
Self confident style	.23** (.25**)	.17** (.27**)	.20** (.16)	.09 (.01)	.20** (.24**)	.19** (.29**)	.30** (.27**)
Optimistic style	.17** (.32**)	.18** (.31**)	.12** (.22**)	.06 (.09)	.12** (.26**)	.08 (.35**)	.26** (.37**)
Helpless style	-.24** (-.26**)	-.19** (-.23**)	-.21** (-.09)	-.14** (-.17**)	-.18** (-.23**)	-.09 (-.26**)	-.22** (-.20**)
Submissive style	-.16** (-.30**)	-.13** (-.31**)	-.18** (-.18**)	-.12** (-.07)	-.13** (-.18**)	-.09 (-.27**)	-.10* (-.18**)
Searching for social support	.09 (-.24**)	.10* (-.21**)	.04 (-.34**)	-.03 (-.12)	.07 (-.06)	.13** (-.09)	.06 (-.19)

* p < .01

** p < .001

is by converting the %0 to 1, %25 to 2; %50 to 3, %75 to 4, and %100 to 5, adding up to a score range between 1 to 160. High scores indicate to high job satisfaction.

Type-A Personality Scale, on the other hand, was developed by the researchers, taking into consideration the question list created by Rathus and Nevid (1989) based on three different sources. The

25 item 5 point Likert scale is assumed to specify whether a person exhibits Type-A or Type-B behaviors. The respondents are asked whether the behavior mentioned in the item represents them and to what degree. They are supposed to specify a certain point between 0% and 100%, similar to the job-satisfaction scale mentioned above. High scores indicate that the person has typical Type-A personality. The score range is between 1 and 125. The other assessment instruments described below were used as concurrent validity criteria.

METHOD

Samples

First sample

The first sample used in the current study, was composed of 426 individuals (226 females (%53.1), and 198 (%46.5) males), working in several public and private banks in Ankara (2 persons did not mention their gender). The mean age of the sample was 33.77 (Sd=7.67), 63.6% was married, 31.2% unmarried, 3.3% divorced, 0.9% widowed. In terms of education level, 1.4% was elementary school, 25.8% high school, and 64.6% were university graduates. Of the total sample, 6.8% had a masters degree, while 1.4%, did not give any information on their education level. 35.4% of the sample were either on a manager or assistant manager position; while 26.5% were service chiefs and chiefs helpers, and 36.1% specialized desk clerks, 1.9% did not mention their position. The average length of time the individuals worked in their banks was reported to be 10.58 years (Sd=9.72).

Second sample

The sample of the second study was composed of 94 individuals (21 (%22.3) females and 69 (%73.4) males; 2 individuals did not mention their gender) working as marketing directors in a private company. The mean age of the sample was 27.43 (Sd=6.01); 29.8% were high school, and 59% were university graduates, while 7.4% reported the were studying towards their master or doctorate degree. The average working year of the individuals in the company was 3.93 years (Sd=3.28).

Assessment instruments

Vulnerability to Stress: This is a 20 item 5 point Likert (Miller et.al., 1988). The score range is 20-100. Higher scores indicate higher vulnerability to stress. The Cronbach's Alpha reliability coef-

ficients for two different Turkish samples were found to be $\alpha = .74$ (Şahin and Durak 1994), and $\alpha = .78$ (Şahin et. al., 1994). The factor analyses revealed three factors, named as "receiving and giving social support" ($\alpha = .68$), "Saving some time only for oneself" ($\alpha = .67$), "Activities towards the body" ($\alpha = .58$). The Scales' correlation with effective coping behaviors was found as $r = -.35$ ($p < .001$), and with ineffective coping behaviors as $r = .24$ ($p < .001$) (Şahin and Durak, 1994).

Ways of Coping with Stress: This is a 4 point Likert-type scale, originally developed by Lazarus and Folkman (1984). The Scale was adapted for the Turkish culture and shortened to 30 items. The factor analyses revealed 5 factors, namely, "Optimistic approach" ($\alpha = .68$), "Self-confident approach" ($\alpha = .80$), "Helpless approach" ($\alpha = .73$), "Submissive approach" ($\alpha = .70$), and "Receiving social support" ($\alpha = .47$). The correlations of these factor sub-scales with the Beck depression Inventory ranged between $r = -.18$ ($p < .01$, Optimistic approach) and $r = .41$ ($p < .001$, Helpless approach); and with Stress Symptoms Scale subscales, they ranged between $r = -.13$ ($p < .01$, Optimistic approach) and $r = .53$ ($p < .001$, Helpless approach) (Şahin and Durak 1995).

RESULTS

The findings are presented below in the following order: First, the results of the "validity" and "reliability" analyses, for Type-A Personality Scale will be given. Then the findings about the Job-Satisfaction Scale will follow under similar headings. For each scale, the above findings will be given in relation to the two samples mentioned above.

Type-A personality scale

Validity analyses

Factorial Structure: The factor analyses was conducted on the first sample (N= 426) since it was larger. The Principal Components Analyses with varimax rotation initially revealed 6 factors with Eigen values greater than 1, explaining 53.5% of the total variance. However, the scree test pointed to a 4 factor solution to be suitable. Therefore the analysis was repeated for a 4-factor solution, which explained 44.3% of the total variance. These items with factor loadings greater than 30 are given below in Table 1.

As it is seen, the first factor (12 items) with eigen value 5.96, explaining 23.8% of the total

variance is labeled as “Importance attributed to the job”. The second factor, labeled as “Moving away from social activities” (4 items), explained 8.7% of the total variance (eigenvalue= 2.17). The third factor composed of 4 items, explaining 6.9% of the total variance, with an eigen value 1.72, was labeled as “Importance attributed to speed”. The last factor, “Importance attributed to timing”, with an eigen value of 1.32 (3 items), explained 5.3% of the total variance.

Criterion Validity: The correlation coefficients, between the factor based subscales of the Type-A Personality Scale, and the criterion instruments, the Stress Vulnerability Scale and the Ways of Coping Inventory, obtained from both samples, are presented in Table 2. The first values in the Table are obtained from the first sample; those in parentheses are obtained from the second sample.

As it is seen in the Table, the correlation coefficients between Type-A Personality subscales and the two criterion instruments (Stress Vulnerability Scale and the Ways of Coping Inventory) ranged between $r = -.05$ ($p < .05$) and $r = -.29$ ($p < .001$) for the first sample. For the second sample, they ranged between $r = .44$ ($p < .01$) and $r = -.07$ ($p > .05$).

Reliability Analyses

The Cronbach's alpha obtained for the total scale from the first and second samples were .86 ($N=426$), and .90 ($N=94$), respectively. Moreover, the alpha coefficients for the factor-based subscales were also calculated. The analyses on the first sample revealed an alpha of .79 for “Importance attributed to job” (12 items), .70 for “Moving away from social activities” (4 items), .48 for “Importance attributed to speed” (6 items), and .70 for “Importance attributed to timing” (3 items). The values obtained from the second sample were $\alpha = .74$, $\alpha = .54$, $\alpha = .61$ and $\alpha = .40$, respectively.

An alternative way to get information on scales reliability is the split-half procedure. It involves splitting a scale in terms of the odd and even numbered items (Erkuş, 2003), and correlating the two halves. Accordingly, the Type-A Personality Scale was divided into two separate halves and the correlation coefficients were obtained for both halves. For the first sample it was $r = .83$ ($p < .01$); for the second sample it was $r = .72$.

As a last step towards searching reliability, the item-total correlations were calculated. For the first

sample, the minimum coefficient was $r = .20$ ($p < .001$) (15th item: “Punctuality in appointments”), and the maximum coefficient was $r = .69$ ($p < .001$) (23rd item: Going back to work immediately after lunch, dinner, etc.). For the second sample they ranged between $r = .22$ ($p < .03$) (3rd item: Believing children should be raised to be competitive) and $r = .62$ ($p < .001$) (24th item: Being in constant hurry).

Job Satisfaction Scale

Validity Studies

Factor Structure. As it was the case for the Type-A Personality Scale, since the sample size was larger ($N=426$), the factor analyses of the Job Satisfaction Scale was conducted on the first sample. A principal components analyses with varimax rotation, revealed 6 factors, with eigenvalues greater than 1, explaining 63.1% of the total variance. The items for the factors which have loadings .30 or higher, are shown on Table 3.

As it is seen on the table, the first factor (eigenvalue= 12.21) with 15 items, explaining 38.1% of the total variance is named as “Organizational Policies”. The second factor, named as “Individual factors” (5 items), had an eigenvalue of 2.31, and explained 7.2% of the total variance. The third factor, with an eigenvalue of 1.94 (4 items), explained 6.1% of the total variance and it was named as “Physical Conditions”. The fourth factor (3 items; eigenvalue of 1.34; explaining 4.2% of the variance) was named, “Control-Autonomy”, followed by the fifth factor, “Pay” (2 items), explaining 4.1% of the variance (eigenvalue= 1.31). The last factor with 3 items, was named as “Interpersonal Relations”, and it explained 3.4% of the variance (eigenvalue= 1.08).

Criterion Validity: In order to get information on the validity of the Scale, the total scores received on the Job Satisfaction Scale, along with the scores on its factor-based subscales, were correlated with the scores on the Stress Symptoms, Vulnerability to Stress, and the Ways of Coping scales.

As it is seen on Table 4, each subscale of the Job Satisfaction Scale had significant correlations, in the expected direction, with most of the subscales of the criterion measures.

Reliability findings: When the reliability coefficients of the factor-based subscales are observed, it was seen that the Cronbach's alpha obtained from the first sample for the Organizational policies sub-

scale was .94 (15 items). For the Individual factors, it was .87 (5 items); for “Physical conditions” (4 items), .74, for “Control/Autonomy” (3 items), .76, for “Pay” (2 items), .64, and for “Interpersonal factors” (3 items), .60. The Cronbach’s alpha’s from the second sample were; .93, .85, .63, .74, .71, and .53, respectively. The coefficients for the total Scale were .94 for the first sample and .96 for the second sample. Moreover, the split-half reliability calculated with odd and even numbered items were $r = .94$ ($p < .001$) (first sample) and $r = .90$ ($p < .001$) (second sample).

Taking the reliability analyses one step further, the item-total correlations were found. For the first sample, they ranged between $r = .28$ ($p < .001$) (Item 24: Noise level at my work place) and $r = .79$ ($p < .001$) (Item 19: The way decisions are made for issues directly affecting the workers). For the second sample the range was between $r = .20$ ($p < .05$) (Item 25: Cleanliness and order in my work place) and $r = .67$ ($p < .001$) (Item 2: Organizational policies and processes in my work place).

DISCUSSION

The above findings will be discussed below; first, those related to the Type-A Personality Scale, followed by those related to the Job Satisfaction Scale

Type-A Personality Scale. In this study, first the factor structure of the two scales were searched for, and 4 factors were specified for the Type-A Personality Scale (Please see Table 1). As it is presented in the Table, the items were placed in the respective factors with high loadings. As it is the common procedure, the criteria to determine which item would be included in which factor, is the factor loading. The related literature states that this loading should at least be .30 (Aron and Aron 2003). In this study, the choice of the items for each factor was actualized accordingly. A look at the content of the items which compose the factors showed that, the factors are parallel to the ones found in literature on Type-A assessment. [For example, the work and time pressures, feeling uncomfortable when one have to wait, perfectionist attitudes, competitive behaviors, found in the “Framingham Type A Scale” (Matteson, et. al., 1984, Cramer 1991, Chusmir and Hood, 1988)]. Moreover, in a study conducted by Akkoyun (2004), using the Type-A Personality Scale, the factor structure was investigated again, and 4 factors explaining 44.36% of the total variance,

similar to the ones mentioned in the present study were found. Almost all of the 25 items were placed under the same factors, except items 1, 2, and 3. In other words, the factor structure obtained from these two different samples was similar.

When these factors were turned into factor subscales and evaluated for their psychometric properties, the reliability coefficients were found to change between .40 (Importance attributed to timing, 3 items) and .79 (Importance attributed to job, 12 numbers). A study conducted on public personnel, responsible for security, using the same instrument, revealed alpha’s ranging between .46 and .83 (Akkoyun, 2004). Even though the subscale, “importance attributed to timing” seems to have a low alpha coefficient, the fact that it consists of only three items might be an explanation. Nevertheless, the correlation of the mentioned subscale with the total Scale is .57 ($p < .001$), and highly significant. The same correlation ranges between .71 ($p < .001$) and .89 ($p < .001$) for the other subscales.

Item-total correlation is an analysis where each item in the instrument is correlated with the total, indicating whether a single item is representative of what the whole instrument is supposedly measuring (Erkuş 2003). In the current study, each item of the Type-A Personality Scale was evaluated for their power to represent the whole Scale. In the related literature, it is stated that the lowest acceptable correlation value is .20 (Aiken 1994, Reported by: Ayvaşık 2000). When this value was taken as the criteria, it was seen that none of the items of the Scale fell below it. The correlation between the two halves of an instrument can also be treated as internal consistency indicators (Aron and Aron 2003). Considering the split half correlation of the Scale, and the item-total correlations, the instrument was found to be satisfactory.

For both samples of the current study, the criteria used for concurrent validity evaluation, were Stress Symptoms, Vulnerability to stress, and Ways of Coping scales. The correlation analyses revealed significant correlations, in the expected direction, between the above scales and the Type-A Personality Scale total score. (Please see Table 2). In other words, as the Type-A behaviors increase, vulnerability to stress and stress symptoms also increase. This finding is consistent with the related literature (Keenan and McBain 1979, Bolger and Zuckerman 1995, Jung 1999, Akkoyun 2004). Akkoyun (2004) in his study, used the same Scale and found correla-

tions between Type-A Personality scores and stress symptoms to be ranging between .26 ($p < .001$) and .39 ($p < .001$).

As it is seen on Table 2, the correlations between Type-A Personality total score and the Ways of Coping Inventory subscales differed according to the samples used in the study. These differences can be attributed to the difference in the size and composition of the samples. However, the tendency of Type-A's to generally use ineffective coping behaviors, mentioned in the related literature, was observed in the current study for both of the samples. For example, as Type-A behaviors increased, use of helpless styles also increased for both samples ($r = .21$ and $r = .44$). On the other hand, decreases in optimistic styles with increases in Type-A behaviors was observed only for the first sample; whereas, increases in submissive styles along with increases in Type-A behaviors, was observed for the second sample. In the Akkoyun (2004) study using the same Type-A Personality Scale, the correlation with Type-A behaviors and effective coping styles was found to be $-.14$ ($p < .001$). The Scale's correlation with ineffective coping styles was $.46$ ($p < .001$). The correlations between the Scale's factor-based subscales, "importance attributed to work" and "moving away from social activities", and stress symptoms total score and subscale scores, were significant and in the expected direction for both samples (Please see Table 2). Nevertheless, the correlation coefficients for the subscales, "importance attributed to speed" and "importance attributed to timing" did not reach to the same significance level. This indicates that the major component of Type-A Personality is importance attributed to job, rather than too much concern with timing and pace. When one makes his/her work the center of his/her life, the single dimensionality (moving away from social activities) can lead to increasing stress. No doubt, the validity of this explanation should be tested with more advanced statistics in future research. Akkoyun's (2004) study, using the same instrument revealed the same pattern observed for the subscales measuring, importance attributed to work and moving away from social activities. Even though, the correlations between "importance attributed to speed" and stress symptoms were not significant, the regression analyses, taking stress symptoms as the dependent variable and the subscales of Type-A Personality Scale and of the Multidimensional Anger Scale as the independent variables, revealed that the importance attributed to speed was a predictive variable when it is with interpersonal anger. (Akkoyun, 2004).

Job Satisfaction Scale. As it was the case with Type-A Personality Scale, initially the factor structure of the Job Satisfaction Scale was evaluated and the items with highest loadings were appointed to their respective factors (Aron and Aron 2003). The Scale was found to have a 6 factor structure, with high loadings on each factor. A similar factor structure was reported in a different study conducted on a sample of 460 individuals working for a public institution responsible for security (Arslan, 2004). Arslan (2004), in his study found six factors explaining 62% of the total variance. When his content of his factors were investigated, the similarities to the factors in the present study were striking. For example, the factor "Organizational Policies" in the current study contains the same items found in the Arslan (2004) study, except for 2 items. Similarly, the current study's 4th factor "Control/Autonomy" and 6th factor "Interpersonal relations" are also the same in their contents, except for one item in each factor. The rest of the factors of the Arslan (2004) study, Factor II ("Individual factors"), Factor III ("Physical conditions"), and Factor V ("Pay"), matched 100% to the contents of the same factors in the current study. Another study conducted by the present authors to investigate the job satisfaction and stress levels of the health personnel in a private hospital also revealed 6 factors with very similar contents, explaining 62% of the total variance (Şahin and Batıgün 1997). All of these findings can be interpreted to point to the structural strength of the Job Satisfaction Scale. Similar structures are observed in other studies using different job satisfaction measures [(For example; Job Description Scale's factors of "pay", "relations with colleagues", "management", etc. (Ergin 1987)].

When these factors obtained for the Job Satisfaction Scale were treated as factor-based subscales, they showed acceptable reliability values [Cronbach's alpha's ranging between .53 ("Interpersonal relations", 3 items) and .94 ("Organizational policies, 15 items)]. In the above reported Arslan (2004) study, they changed between .45 and .95 (Arslan, 2004), indicating to the reliability of the presented Instrument. A similar statement can be made regarding the item-total correlations obtained. None of the items fell below the generally accepted .20 value. This finding and the split-half reliability figure also pointed to the internal consistency of the Scale (Aron and Aron 2003).

In this study, the criterion for investigating the validity of the instrument was Stress Symptoms,

Vulnerability to Stress, and Ways of Coping scales. A look at the related literature shows that the issue of “job stress” is generally studied in terms of lack of job satisfaction or burnout (Lee and Ashforth 1996, Keen 1999, Jamal and Baba 2001). Lack of job satisfaction is taken as an important indicator of job stress. The current study also revealed significant correlations, in the expected direction, with Stress Symptoms total score and with all of its subscales for both samples. In other words, as job satisfaction increased, stress symptoms decreased (Please see Table 4). Similarly, as job satisfaction increased, vulnerability to stress decreased. Moreover, as effective coping styles increased, job satisfaction also increased; as ineffective coping increased, job satisfaction decreased. The correlations between “organizational policies”, a subscale of the Instrument, and the criterion measures were also significant both samples. The related literature also states that organizational policies are the most important component of job-satisfaction (Abramis 1994). “Pay” catches our attention as a subscale with relatively lower correlations with the criterion measures, indicating to some clues on the re-

lation between job satisfaction and stress. It seems that the stress workers experience is not so much a function of what one receives as pay but what one experiences at work in relation to the management policies and interpersonal relations. No doubt this is another issue that should be investigated in future research.

In conclusion, the two scales presented with the current study, can be considered as two reliable and valid measures to measure satisfaction at the work place and the Type-A behaviors performed by the workers. However, the actual value of an instrument is a function of the number of studies using the instrument, and the similar results obtained. This is also true for the Job Satisfaction Scale and the Type-A Personality Scale presented in the current manuscript; the more studies conducted using these scales, the richer and stronger will be the data for the psychometric properties of the instruments. As the power of the instruments to measure these variables is supported by other research, they can make significant contributions to research on issues of physical and psychological health.

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