

The Relationship between Job Satisfaction and Mental Health in the Personnel of an Oil Refinery in Iran

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Abstract

This research examined the relationship between job satisfaction and mental health among employees of an oil refinery in Iran. It was hypothesized that global job satisfaction and its five components: satisfaction with work, co-workers, pay, promotion, and supervision have negative correlations with the nine mental disorders: somatization (SOM), obsessive-compulsive (O-C), interpersonal sensitivity (I-S), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), Paranoid ideation (PAR), and psychoticism (PSY). The JDI and the SCL-90-R were used to measure overall job satisfaction and its five components, and the nine mental disorders, respectively. The sample consisted of 828 subjects selected by a multiphase random method; 665 were regular employees and 163 were managers at different levels. Results indicated that global job satisfaction and its five components have negative correlations with the nine mental disorders at $P < 0.01$ level of significance. These correlation coefficients have a range from -0.10 to -0.36 for regular employees and from -0.12 to -0.35 for managers. Only 8 correlation coefficients out of 108 did not reach statistical significance at $P < 0.05$ level. The multiple correlation coefficients of the five job satisfaction facets and the nine mental disorders have a range from 0.17 to 0.38 for regular employees and from 0.34 to 0.45 for managers. All these multiple correlation coefficients were significant at $P < 0.01$.

Keywords: Job satisfaction, Mental health, Mental disorder

Job satisfaction is a topic of wide interest to people who work in organizations and to those who study such people. In fact, it is the most frequently studied variable in organizational behaviour research (Specter,

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2000). Furthermore, it is a central variable in both research and theory of organizational phenomena ranging from job design to supervision.

There are good reasons for paying attention to job satisfaction. The humanitarian perspective prescribes that people deserve to be treated fairly and with respect. Job satisfaction, to some extent, is a reflection of good treatment. It also can be considered an indicator of emotional well-being or psychological health. The utilitarian perspective asserts that job satisfaction can lead to employee behavior that may affect organizational functioning. In addition, job satisfaction can be a reflection of organizational functioning. Differences among organizational units in job satisfaction can be diagnostic of potential trouble spots.

Concerns have been raised that both physical and psychological health might be influenced by job attitudes. People who dislike their job could experience adverse health outcomes. These outcomes include both physical symptoms and psychological problems (Spector, 2000). Palmore (1969) claims that job dissatisfaction results in a shortened lifespan.

Many correlational studies have shown a link between health and job satisfaction. Researchers have reported significant correlations between job satisfaction and physical or psychosomatic symptoms, such as, headache and upset stomach (e.g. Begley & Czajka, 1993; Fox, Dwyer, & Ganster, 1993; Lee, Ashfold, & Bobko, 1990; O'Driscoll & Beehr, 1994). Job dissatisfaction has also been found to be associated with emotional states of anxiety (Jex & Gudanowski, 1992; Spector, Dwyer, & Jex, 1988) and depression (Bluen, Barling, & Burns, 1995; Schaubroeck, Gunster, & Fox, 1992).

Faragher, Cass & Cooper (2005), in their meta-analysis “the relationship between job satisfaction and health”, conducted a systematic review of 485 studies with a combined sample size of 267995 subjects. They evaluated the research evidence that linked self-report measures of job satisfaction to measures of physical and mental well-being. The results indicated that the overall correlation combined across all health measures was $r = 0.312$ (0.370 after Schmidt-Hunter adjustments). Job satisfaction was most

strongly associated with mental/psychological problems; the strongest relationships were found for burnout (corrected $r = 0.478$), self – esteem ($r = 0.429$), depression ($r = 0.428$), and anxiety ($r = 0.420$). The relationships found suggest that job satisfaction level is an important factor influencing the psychological health of workers.

The present research was conducted to examine the relationship of overall job satisfaction and its five components: satisfaction with work, co-workers, pay, promotion, and supervision to the nine mental disorders: somatization, obsessive-compulsive, depression, interpersonal sensitivity, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism.

On the basis of the literature review, the following three hypotheses were presented and tested in this research:

- 1- Overall job satisfaction is correlated negatively with each of the nine mental disorders of somatization, obsessive-compulsive, depression, interpersonal sensitivity, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism.
- 2- Each of the five components of job satisfaction consisting of satisfaction with work, supervision, co-workers, pay, and promotion is correlated negatively with each of the nine mental disorders.
- 3- The five components of job satisfaction have a multiple correlation with each of the nine mental disorders.

Definitions

Some theories view job satisfaction as being the positive emotional reactions and attitudes an individual has towards his/her job (Oshagbemi, 1999). Others have viewed it as a bi-dimensional construct consisting of intrinsic and extrinsic satisfaction dimensions (Warr, Cook, & Wall, 1979), or alternatively of satisfaction/lack of satisfaction and dissatisfaction/lack of dissatisfaction dimensions (Winefield, Tiggerman and Goldney. 1988). VandenBos(2007) defines job satisfaction as the attitude of a worker toward his or her job, often expressed as a hedonic response of liking and disliking the work itself, the rewards(pay, promotions, recognition), or the

contexts (working conditions, colleagues).

Mental health is a state of mind characterized by emotional well-being, good behavioural adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life (VandenBos, 2007). However, in most research endeavours in this context the research instruments measure mental disorder (illness) instead of mental health. Hence, the following definition of mental disorder is also presented: mental disorder is characterized by psychological symptoms, abnormal behaviours, impaired functioning, or any combination of these. Such disorders may cause clinically significant distress and impairment in a variety of domains of functioning and may be due to organic, social, genetic, chemical, or psychological factors (VandenBos, 2007).

Method

The population of this research consisted of the employees of an oil refinery in Iran. The sample included 841 subjects, 678 regular employees and 163 managers. They were selected according to a stratified random sampling method. The research instruments were as follows: 1- Job Descriptive Index (JDI). 2- The Symptom Checklist-90-Revised (SCL-90-R).

These instruments have shown high reliability and validity. In the present research, for JDI, Cronbach alpha coefficients ranged from 0.74 to 0.90, and the split-half coefficients ranged from 0.61 to 0.90. For SCL-90-R, Cronbach alpha coefficients ranged from 0.72 to 0.90 and the split-half coefficients ranged from 0.71 to 0.89.

The validity coefficients for JDI, ranged from 0.51 to 0.78 for managers and from 0.51 to 0.69 for regular employees. The validity coefficients for SCL-() -R, ranged from 0.23 to 0.61, all of which were significant, at less than 0.05 statistical significant level.

Research Findings

Research findings are presented in two sections: the descriptive findings

and the findings relevant to the hypotheses. Descriptive findings, consisting of the means and standard deviations of the research variables, that is, job satisfaction and its five facets and the nine mental disorders, are presented in Tables 1 and 2.

Table 1 contains the means and standard deviations of global job satisfaction and its five components.

Table 1
Means and Standard Deviations of Global Job Satisfaction and its Five Facets for Managers and Regular Employees

Variables	Managers		Regular employees	
	Mean	SD	Mean	SD
global job satisfaction	150.89	42.99	138.67	46.63
satisfaction with work	32.21	10.64	31.68	11.53
satisfaction with supervision	35.94	13.35	33.25	14.30
satisfaction with pay	24.75	12.39	22.23	13.41
satisfaction with promotion	23.97	14.78	20.46	14.57
satisfaction with co-workers	31.01	13.83	31.06	13.38

Table 1 shows that both managers and regular employees have obtained the highest means on satisfaction with supervision and the lowest means on satisfaction with promotion. It is also evident that managers have higher means than regular employees on the global job satisfaction and on four out of the five job satisfaction facets. On the other hand, the regular employees have higher standard deviations on the global job satisfaction and on the same four facets of job satisfaction; although, the differences may not be statistically significant.

In order to explore the possible differences between the means of managers and regular employees on the five facets of job satisfaction, a

repeated measure ANOVA was conducted. The results are shown in Table 2

Table 2
Results of a Repeated Measure ANOVA on the Five Facets of Job Satisfaction for Managers and Regular Employees

Source of variation		SS	df	Ms	F	P
Between subjects	A(groups)	3972.53	1	3972.53	9.45	0.002
	subjects within groups	344736.63	820	420.41	-	-
Within Subjects	B(facets)	67249.48	4	16812.37	141.38	0.0001
	AB	1060.94	4	265.24	2.23	0.063
	B×subjects within groups	390031	3280	118.91	-	-

Since, the means of managers and regular employees on the overall job satisfaction are 150.89 and 138.67, respectively, we conclude, from the between subjects section of Table 2, that managers have a significantly higher mean than that of regular employees. In addition, the within subjects section of Table 2, shows that the total sample differs with respect to the five facets of job satisfaction, but there is no significant interaction between groups and facets of job satisfaction at the 0.05 statistical significance level.

The means and standard deviations of the nine mental disorders for the two groups of managers and regular employees are shown in Table 3.

As Table 3 indicates, the means of the three dimensions of depression, obsessive-compulsive, and somatization are higher than the means of the other dimensions for the managers and the regular employees.

A repeated measure ANOVA was conducted on the scores of the nine mental disorders to explore the differences between managers and regular employees. The results are presented in Table 4.

The between subjects section of Table 4 indicates that managers and regular employees do not differ with respect to the overall mental health.

Moreover,

the total sample differs significantly on the nine mental disorders, while the

interaction between groups and mental disorders is not significant at the designated 0.05 statistical significance level.

Table 3
Means and Standard Deviations of Managers and Regular Employees on Nine Mental Disorders

Dimensions of Mental Disorder	Managers		Regular employees	
	Mean	SD	Mean	SD
Somatization	6.44	6.86	7.04	6.60
obsessive- compulsive	6.23	5.39	7.29	5.99
interpersonal- sensitivity	3.96	4.70	4.77	4.68
Depression	6.93	6.96	7.91	7.54
Anxiety	4.74	6.18	5.12	5.90
Hostility	3.28	3.14	3.30	3.29
Phobic anxiety	1.30	2.39	1.51	2.59
paranoid ideation	4.99	4.78	5.88	4.54
Psychoticism	2.68	3.59	3.35	4.47

Table 4
Results of a Repeated Measure ANOVA on the Nine Mental Disorders for the Managers and the Regular Employees

Source of variation		SS	Df	Ms	F	P
Between subjects	A (groups)	458.18	1	458.18	2.66	0.103
	subjects within groups	141124.48	819	172.31	-	-
Within subjects	B(mental disorders)	16379.01	8	2047.38	215.13	0.0001
	AB	128.66	8	16.08	1.69	0.095
	Bx subjects within groups	62355.02	6552	9.52	-	-

The simple correlation coefficients between the global job satisfaction and its five facets, and the nine mental disorders for managers are presented in Table 5.

As it can be seen in Table 5 all but 6 of the 54 correlation coefficients are negative and statistically significant. The six non – significant

coefficients are between satisfaction with promotion and the six mental disorders of obsessive-compulsive, interpersonal sensitivity, depression, anxiety, phobic anxiety, and psychoticism

The simple correlation coefficients between global job satisfaction and its facets, and the nine mental disorders for regular employees are presented in Table 6.

It can be seen in Table 5 that all of the 54 correlation coefficients are negative and statistically significant. In order to identify the facets of job satisfaction that contribute independently to the explanation of the variance of the nine mental disorders in managers and regular employees a stepwise multiple regression analysis was conducted for each of the disorders. The results are presented in Tables 7 and 8.

Table 7 shows that, for managers, satisfaction with co-workers is the predictor of all the 9 mental disorders. Satisfaction with work can predict the six mental disorders of obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, and phobic anxiety. Finally, satisfaction with supervisor is the predictor of only one mental disorder, that is, paranoid ideation.

As it can be seen in Table 8, for regular employees, satisfaction with work is the predictor of all the nine mental disorders. Satisfaction with co-workers is the predictor of seven mental disorders of somatization, obsessive-compulsive, interpersonal sensitivity, anxiety, depression, hostility, paranoid ideation, and psychoticism. Satisfaction with supervision is the predictor of six mental disorders of somatization, obsessive-compulsive, interpersonal sensitivity, anxiety, hostility, and paranoid ideation. Satisfaction with promotion is the predictor of four mental disorders of depression, phobic anxiety, paranoid ideation, and psychoticism. Finally, satisfaction with pay is only the predictor of anxiety.

Discussion

First, a brief summary of findings is presented. Then, we discuss the

Table 5
Zero – Order Correlation Coefficients between Job Satisfaction
and its Five
Facets, and the Nine Mental Disorders for Managers

Mental disorders	<i>Work</i>		<i>Supervision</i>		<i>Pay</i>		<i>Promotion</i>		<i>Co-worker</i>		<i>Overall satisfaction</i>	
	r	P	r	P	r	p	r	p	r	p	r	p
SOM	-0.24	0.001	-0.20	0.005	-0.19	0.005	-0.14	0.034	-0.32	0.0001	-0.33	0.0001
O-C	-0.26	0.001	-0.19	0.008	-0.18	0.011	-0.08	0.142	-0.30	0.0001	-0.30	0.0001
I-S	-0.31	0.0001	-0.21	0.003	-0.22	0.003	-0.07	0.169	-0.28	0.0001	-0.32	0.0001
DEP	-0.29	0.0001	-0.23	0.002	-0.24	0.001	-0.12	0.06	-0.31	0.0001	-0.35	0.0001
ANX	-0.27	0.0001	-0.22	0.02	-0.17	0.012	-0.10	0.107	-0.28	0.0001	-0.31	0.0001
HOS	-0.25	0.001	-0.18	0.01	-0.16	0.018	-0.14	0.035	-0.30	0.0001	-0.31	0.0001
PHOB	-0.13	0.01	-0.12	0.05	-0.27	0.0001	-0.04	0.297	-0.33	0.0001	-0.13	0.0001
PAR	-0.12	0.003	-0.23	0.001	-0.20	0.005	-0.16	0.018	-0.25	0.001	-0.33	0.0001
PSY	-0.22	0.0001	-0.21	0.003	-0.13	0.04	-0.07	0.170	-0.29	0.0001	-0.28	0.0001

Table 6
Zero – Order Correlation Coefficients between Job Satisfaction
and its Five
Facets, and the Nine Mental Disorders for Regular Employees

Mental disorders	Work		Supervision		Pay		Promotion		Co-worker		Overall satisfaction	
	r	p	r	p	r	P	r	p	r	p	r	p
SOM	-0.17	0.0001	-0.18	0.0001	-0.14	0.0001	-0.13	0.0001	-0.17	0.0001	-0.23	0.0001
O-C	-0.24	0.0001	-0.21	0.0001	-0.13	0.0001	-0.19	0.0001	-0.19	0.0001	-0.28	0.0001
I-S	-0.24	0.0001	-0.20	0.0001	-0.15	0.0001	-0.16	0.0001	-0.20	0.0001	-0.27	0.0001
DEP	-0.24	0.0001	-0.20	0.0001	-0.17	0.0001	-0.20	0.0001	-0.19	0.0001	-0.30	0.0001
ANX	-0.19	0.0001	-0.18	0.0001	-0.16	0.0001	-0.18	0.0001	-0.17	0.0001	-0.26	0.0001
HOS	-0.20	0.0001	-0.20	0.0001	-0.13	0.0001	-0.16	0.0001	-0.20	0.0001	-0.25	0.0001
PHOB	-0.13	0.0001	-0.10	0.004	-0.07	0.02	-0.14	0.0001	-0.08	0.0001	-0.15	0.0001
PAR	-0.28	0.0001	-0.29	0.0001	-0.17	0.0001	-0.23	0.0001	-0.29	0.0001	-0.36	0.0001
PSY	-0.21	0.0001	-0.14	0.0001	-0.08	0.016	-0.11	0.001	-0.16	0.0001	-0.20	0.0001

Table 7
Results of Nine Regression Analyses for the Five Facets of Job
Satisfaction as
Predictors and the Nine Mental Disorders as Crit

Mental disorders	MR	SR	F P	β , t, and p of the predictors				
				Work	Supervision	Pay	Promotion	Co-workers
SOM	0.32	0.10	18.73 0.0001					$\beta = -0.32$ t=4.32 p= 0.0001
O-C	0.35	0.12	10.89 0.0001	$\beta=-0.17$ t=2.25 p= 0.025				$\beta = - 0.25$ t =3.15 p= 0.002
I-S	0.36	0.13	11.74 0.0001	$\beta = -0.24$ t=3.09 p= 0.002				$\beta = -0.20$ t=3.09 p= 0.002
DEP	0.37	0.14	12.66 0.0001	$\beta = - 0.21$ t=2.68 p= 0.008				$\beta = - 0.25$ t=3.17 p= 0.001
ANX	0.34	0.11	10.23 0.0001	$\beta = - 0.20$ t= 2.61 p= 0.009				$\beta = -0.21$ t=2.66 p= 0.008
HOS	0.34	0.11	10.40 0.0001	$\beta = -0.17$ t=2.16 p= 0.031				$\beta =-0.24$ t=3.11 p= 0.002
PHOB	0.40	0.16	14.82 0.0001	$\beta = - 0.22$ t=2.92 p= 0.003				$\beta =-0.26$ t=3.41 p= 0.0001
PAR	0.30	0.09	7.68 0.0001		$\beta = -0.18$ t=2.16 p= 0.031			$\beta =-0.17$ t=2.13 p= 0.034
PSY	0.29	0.08	14.75 0.0001					$\beta =-0.29$ t=3.84 p= 0.0001

Table 8
Results of Regression Analyses for the Five Facets of Job Satisfaction
as Predictors and the Nine Mental Disorders as Criteria
for Regular Employees

Mental Disorders	MR	SR	F P	β , t, and p of the predictors				
				Work	Supervision	Pay	Promotion	Co-workers
SOM	0.23	0.05	12.48 0.0001	$\beta = -0.17$ t=4.55 p= 0.0001	$\beta = -0.10$ t=2.45 p= 0.014			$\beta = -0.10$ t=2.36 p= 0.018
O-C	0.28	0.08	19.59 0.0001	$\beta = -0.09$ t=2.28 P= 0.022	$\beta = -0.12$ t=2.90 p= 0.003			$\beta = -0.08$ t=2.01 p= 0.044
I-S	0.28	0.08	19.39 0.0001	$\beta = -0.16$ t=3.89 p= 0.0001	$\beta = -0.09$ t=2.90 p= 0.022			$\beta = -0.10$ t=2.60 p= 0.009
DEP	0.29	0.08	20.35 0.0001	$\beta = -0.16$ t=3.88 p= 0.0001			$\beta = -0.13$ t=3.67 p= 0.001	$\beta = -0.19$ t=2.29 p= 0.021
ANX	0.24	0.06	14.23 0.0001	$\beta = -0.15$ t= 3.67 p= 0.0001	$\beta = -0.11$ t=2.79 p= 0.005	$\beta = -0.08$ t=2.13 p= 0.033		
HOS	0.26	0.06	16.10 0.0001	$\beta = -0.12$ t=3.04 p= 0.002	$\beta = -0.11$ t=2.62 p= 0.008			$\beta = -0.11$ t=2.67 p= 0.007
PHOB	0.14	0.02	14.39 0.0001	$\beta = -0.11$ t=2.14 p = 0.032			$\beta = -0.11$ t=2.74 p= 0.0001	
PAR	0.38	0.14	39.81 0.0001	$\beta = -0.16$ t=4.001 p= 0.0001	$\beta = -0.16$ t=3.98 p= 0.0001		$\beta = -0.09$ t=2.28 p= 0.022	$\beta = -0.17$ t=4.20 p= 0.0001
PSY	0.23	0.05	18.64 0.0001	$\beta = -0.17$ t=4.17 p= 0.0001			$\beta = -0.16$ t=3.89 p= 0.0001	$\beta = -0.10$ t=2.57 p= 0.01

findings, their shortcomings, and their implications for the development of organizations and the well-being of the workforce.

1. Managers' overall job satisfaction is higher than that of the regular employees.
2. The total sample's satisfaction with the nature of work, supervision and co-workers is higher than that of satisfaction with pay and promotion.
3. Job satisfaction, in general, and satisfaction with work, supervision, and co-workers, in particular, are about average, and satisfaction with pay and promotion are below average.
4. The means of the nine mental disorders for managers and for regular employees indicate that employees are not suffering too much from these disorders.
5. The simple correlation coefficients between the global job satisfaction and its five facets, on the one hand, and the nine mental disorders, on the other hand, for both manager and regular employees are all negative and statistically significant, at least, at the 0.05 level. SCL-90-R scales measure nine mental disorders in a manner that high scores mean possessing higher degrees of mental illness. On the other hand, JDI scales measure five facets of job satisfaction in a way that high scores mean greater amounts of job satisfaction. That is why the correlation coefficients between scales of SCL-90-R and those of JDI are negative. If the scoring of SCL-90-R is reversed, so that high scores indicate lower degrees of mental disorder and higher degrees of mental health, then the obtained correlation coefficients become positive. Hence, we can infer that there is a positive relationship between job satisfaction and mental health.
6. The results of the stepwise multiple regression analyses for managers show that:
 - 6-1. Satisfaction with co-workers is the predictor of all the nine mental disorders.

- 6-2. Satisfaction with the nature of work is the predictor of six mental disorders of obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, and phobic anxiety.
- 6-3. Satisfaction with supervision is the predictor of only one mental disorder, that is, paranoid ideation.
7. The results of the stepwise multiple regression analyses for regular employees show that:
 - 7-1. Satisfaction with the nature of work is the predictor of all the nine mental disorders.
 - 7-2. Satisfaction with co-workers is the predictor of seven mental disorders of somatization, obsessive-compulsive, interpersonal sensitivity, anxiety, depression, hostility, paranoid ideation, and psychoticism.
 - 7-3. Satisfaction with supervision is the predictor of the six mental disorders of somatization, obsessive-compulsive, interpersonal sensitivity, anxiety, hostility, and paranoid ideation.
 - 7-4. Satisfaction with promotion is the predictor of four mental disorders of depression, phobic anxiety, paranoid ideation, and psychoticism.
 - 7-5. Satisfaction with pay is the predictor of only one mental disorder, that is, anxiety.

Comparing the results of this study to those reviewed in the literature review section of this article, highlights clearly the compatibility between these two sets of results. This compatibility is more obvious when we consider the results of the meta-analysis study by Faragher, Cass, and Cooper (2007). Furthermore, the present research has shed some light on the relation of job satisfaction to some new mental disorders for the first time. These are the negative correlation coefficients found between overall job satisfaction and its five facets and the mental disorders of obsessive-compulsive, interpersonal sensitivity, paranoid ideation, and psychoticism.

However, we should be cautious in generalizing the new findings excessively, due to the fact that the sample of this research was not selected

randomly from the general population. Moreover, it is obvious that job satisfaction has consequences other than mental disorders; and mental disorders have precedents other than job satisfaction. Thus, research should be directed toward other precedents of mental health to enhance it in the workforce. Similarly, more research is needed to identify the causes and consequences of job satisfaction in our organizations.

Based on the results of this research, we recommend that our organizations launch research projects to identify work practices that cause most job satisfaction and dissatisfaction among their workforce. This will pave the way for the implementation of proper interventions to enhance the favorable work practices and to eradicate the dysfunctional ones. Such a policy will lead to improvements in the employees' quality of life and in the productivity of the organizations.

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