

# The Influence of Job Satisfaction on Mental Health of Factory Workers

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## Abstract

**Background:** The current study aimed to investigate factory workers' mental health, to examine the level of job satisfaction, and to identify the dimension of job satisfaction that influences mental health. **Method:** In October 2008, a survey was conducted with 173 factory workers to investigate their mental health with the General Mental Health Questionnaire consisting of 28 items (GHQ-28). The job satisfaction component of the survey, developed for this study, evaluated 5 domains of job satisfaction: (1) pay, (2) work security, (3) co-worker, (4) supervision, and (5) promotion opportunity. Frequency, mean, standard deviation, correlation and multiple linear regression analysis were used for the data analysis.

**Results:** The results revealed that 33.5% of the workers had poor mental health, with anxiety and insomnia at the highest level (29.5%), followed by somatic symptoms (28.9 %), social dysfunction (23.7%), and severe depression (12.1 %). The results from correlation analysis indicated that the overall job satisfaction was negatively related to somatic symptoms, anxiety and insomnia, social dysfunction, and total GHQ scores. Regarding the relationships between psychological symptoms and the 5 dimensions of job satisfaction, severe depression had a negative relation only with work security. On the other hand, work security had the highest negative relation with somatic symptoms, anxiety and insomnia, and social dysfunction. Moreover, the findings from multiple regression analysis indicated a significant negative correlation between independent variables of overall job satisfaction ( $\beta = -.330$ ) and work security ( $\beta = -.303$ ) and the dependent variable of GHQ-28 scores. Thus increased overall job satisfaction and increased work security were related to better mental health. Conversely, lower overall job satisfaction and work security were related to poorer mental health. **Conclusions:** The findings indicate the relationship between job satisfaction and mental health. Organizations can focus on improving employee overall job satisfaction which can influence their employees positive mental health.

## INTRODUCTION

Psychiatric disorders associated with anxiety, depression, sleep disturbance, and related symptoms have been reported to be prevalent in the community and the workplace. In Europe and the United States, the estimated prevalence of these problems among workers ranges from 15 to 20%. (1) In a developing country, 35% of workers experience measurable health problems in the form of anxiety, sleep disturbance, depression, somatic complaints and other clinical indicators of stress (2). The spillover model suggests the influence of work extending to fundamental aspects of workers' personal lives (3-5). One of the most commonly studied topics is the relationship between work and emotional well-being such as mental health. In Thailand, there is a survey indicating that Thai people are stressed due to work problems which were considered as the most influential factors in mental health (6).

Employers should give special attention to their workers' state of mental health because mental-ill-health or distress is a major cause of absence from work, reduced productivity and increased staff turnover (7-8). Based on a meta-analysis (9) one can conclude that work impacts both physical and mental health. The meta-analysis study revealed that exhaustion, self-esteem, despair and anxiety were highly related to job satisfaction. Moreover, occupational mental health has been shown to be significantly related to desired organizational outcomes such as commitment and satisfaction (10). In particular, studies conducted in the last 10 years have found a close link between employees' mental health and job satisfaction (9, 11-14). Additionally, a wide variety of studies using very different samples report an association between job satisfaction and positive mental health. Conversely, jobs of poor quality cause distress (15). Although a direct link with organizational performance, and thus economic performance, has yet to be established, an

indirect link can be ascertained: low satisfaction leads to higher absenteeism and labor turnover rates (16).

As described above, there is strong evidence of a link between job satisfaction and mental health. Further work is required to determine which particular dimensions of job satisfaction influences workers' mental health the most. Such information will benefit employers as they can then develop specific strategies to increase job satisfaction and hence presumably increase the mental health and wellbeing of employees.

Despite the findings by some investigators that point to a relationship between job satisfaction and mental health (9, 11-15), few studies focus on the relationship between job satisfaction dimensions and factory workers' mental health, especially in Thailand (17). To clarify the association of broad dimensions of job satisfaction with the factory workers' mental health, we have conducted a cross-sectional survey in a beverage factory located in the south of Thailand.

### **AIMS**

The aims of this study were first to identify the mental health state of factory workers and second to examine the level of job satisfaction. The final aim was to investigate the influence of job satisfaction on mental health. In particular, it aimed to examine the extent to which the dimensions of job satisfaction can explain the mental health state of the workers.

### **METHODS**

#### **RESPONDENTS**

A cross-sectional survey was administered to employees at a beverage factory located in Hat Yai district in the province of Songkhla, south of Thailand. The factory is engaged in the manufacture and distribution of soft drinks and serves all 14 provinces in the south of Thailand. The current study was approved by the research committee of the Department of Education Foundation, Faculty of Liberal Arts, Prince of Songkla University, Thailand. It was conducted in accordance with the ethical guidelines of the Declaration of Helsinki.

Working conditions for this factory are that it runs 24 hours per day; with 3 shifts (8.00 a.m. - 4 p.m., 4 p.m.-12 a.m., and 12 a.m.-8 a.m.) and operates 6 days/week. Approximately 80% of the workers work in the production line. The factory doesn't use the warehouse system. They produce by demand so when there are high demands, the employees have to

work overtime. There were a total number of 796 workers in this factory.

From the total of 796 workers, a 1 in 3 random sampling method was employed to select the respondents. A set of self-reported questionnaires were distributed directly to 266 workers. Data were collected during October 2008. Of the 266 employees invited to complete the survey, 173 (65.8%) completed the entire set of questionnaires, forming the study sample.

Out of the remaining 173 respondents, 71.1% of the workers were male. Mean age of the respondents was 33.86 years (SD. =7.76). The highest percentage of respondents was in the 26-30 age group (24.3%). With regard to marital status, 55.5% of the workers were married and 44.5% were single.

### **JOB SATISFACTION ASSESSMENT**

Job satisfaction is an attitudinal variable that reflects how people feel about their jobs overall and various aspects of the job. In simple terms, job satisfaction is the extent to which people like their jobs. It has been posited as a cause of important employee and organizational outcomes ranging from job performance to health and longevity (10). To measure job satisfaction, a self-reported questionnaire was created based on the Job Descriptive Index (JDI) which measures satisfaction in five facets of work-itself, pay, supervisor, co-workers, and promotion opportunities (18). However, one of the subscales was changed from work-itself to be work security. Few studies have investigated the subjective feelings of work security that are held by many workers who remain employed, and as whether they change jobs or not. Yet, in the new era of flexible accumulation, increased downsizing, growing use of contingent labor, and the erosion of the "social contract" between workers and their employers (19-23), workers' perceptions of work security are more important than ever. Accordingly, work security was selected as a domain of job satisfaction instead of work-itself.

Consequently, the current study of job satisfaction assessment contains 5 subscales as follows: pay (2 items), work security (3 items), co-workers (3 items), supervision (3 items), and promotion opportunity (2 items). There are also 16 additional items not included in these subscales that are added for a total job satisfaction score of 29 items. Each of these 29 items require respondents to rate the scale of their satisfaction from 5 = most satisfied, 4 = very satisfied, 3 = moderately satisfied, 2 = slightly dissatisfied, 1 = not satisfied at all. To test the reliability of the questionnaire, the

internal consistency of the question items was tested. Both the reliability and validity were good and the internal consistency has the Cronbach alpha coefficient values of 0.91-0.95.

## MENTAL HEALTH ASSESSMENT

The General Mental Health Questionnaire with 28 items (GHQ-28) was employed in this study. The GHQ-28 as a self-report instrument was designed for the detection and assessment of individuals with an increased likelihood of current psychiatric disorders. The GHQ-28 has four subscales: somatic symptoms (7 items), anxiety and insomnia (7 items), social dysfunction (7 items), and severe depression (7 items). The existence of four subscales permits analyses within the subscales and this is an additional advantage of the GHQ-28 scale over other versions of questionnaire<sup>23</sup>. The GHQ has been developed into Thai. It was first translated into Thai and back translated into English to ensure correct translation. This process included that 300 representative adults were sampled to answer the questionnaire. One out of the three psychiatrists who had high interpreter reliability interviewed each patient and made the diagnoses using ICD-10 criteria. Scores of GHQ-28 were then analyzed for internal consistency, sensitivity, and specificity to determine reliability and to yield an appropriate cut-off point. The Thai GHQ-28 gave 84% sensitivity and 76% specificity at a threshold score of 5/6. Internal consistency was 91%. It can be concluded that the Thai GHQ-28 is reliable and valid as a screening instrument for psychiatric morbidity. Furthermore, the Thai version of the GHQ-28 developed can be used as a self-administrative screening instrument to detect psychiatric disorders in the Thai population (25). The scoring was based on Goldberg's scoring guidelines (GHQ score: 0-0-1-1) (26). In addition, the Thai GHQ-28 scores indicate that <6 is low psychiatric morbidity and scores of ≥ 6 as the presence of psychiatric morbidity.

## DATA ANALYSIS

SPSS version 13 was used for data analysis. Percentage, frequency, mean and standard deviation were employed to analyze overall job satisfaction, job satisfaction subscale scores and GHQ-28 subscale scores. Also, correlation and multiple linear regression analysis were employed to test the relationship between variables including total and subscale scores of job satisfaction and GHQ-28 scores.

## RESULTS

## JOB SATISFACTION

Results revealed that the overall job satisfaction mean score was 3.0. Regarding the dimensional scores, work security ranked the highest, with a mean score of 3.2, while satisfaction with pay ranked the lowest (mean=2.5), as illustrated in Table 1.

**Figure 1**

Table 1 Job satisfaction questions, response frequencies and mean scores

n=173						
Content	1	2	3	4	5	Mean SD
<b>Pay</b>						<b>2.54 0.94</b>
Wage commensurate with workload.	47	49	64	7	6	2.28 1.02
In your factory, system of pay is clear and fair.	16	53	73	23	5	2.69 0.92
<b>Work security</b>						<b>3.20 0.89</b>
In your factory, no one is likely to get laid off.	16	27	71	50	9	3.05 1.01
Your factory has good protection from ill health and injury at work.	6	23	66	64	13	3.32 0.92
In your department, everyone can express their opinion without fear.	8	19	87	47	12	3.21 0.90
<b>Supervision</b>						<b>3.08 0.93</b>
Supervisor is willing to listen to your work problem.	21	24	64	55	9	3.04 1.07
Supervisor can be relied upon when things get tough on your job.	13	32	63	49	16	3.13 1.06
Help is available from your supervisor when you have a problem.	14	31	67	48	13	3.09 1.04
<b>Co-worker</b>						<b>2.97 0.79</b>
Your colleagues never take advantage of you.	19	36	75	36	7	2.86 1.00
Help is available from your co-worker when you have a problem.	10	31	86	43	3	2.99 0.86
You have a good relationship with your colleagues.	7	31	83	50	2	3.05 0.82
<b>Promotion opportunities</b>						<b>2.57 0.90</b>
The work promotion system in your factory is clear and fair.	31	28	83	29	2	2.67 0.99
Chance for promotional opportunity is clear and fair.	32	49	72	18	2	2.47 0.95
<b>Overall job satisfaction</b>						<b>3.03 0.65</b>
Wage(include monthly salary, overtime, and bonus)	47	49	64	7	6	2.28 1.02
Fringe benefits	16	53	73	23	5	2.69 0.92
Work schedule	9	21	102	31	9	3.06 0.85
Work load	14	25	84	42	6	3.01 0.93
Work security	16	27	71	50	9	3.05 1.01
Work safety	6	23	66	64	13	3.32 0.92
The physical working conditions	8	19	87	47	12	3.21 0.90
Work content	7	26	83	54	3	3.12 0.83
The readiness of work equipment	4	29	94	38	8	3.10 0.81
Relationship with the colleagues	5	19	59	72	18	3.46 0.92
Relationship with the supervisor	9	23	70	57	13	3.24 0.96
Meaningfulness of work	7	19	62	70	14	3.38 0.93
Promotion opportunities	28	48	68	21	6	2.58 1.02
Opportunity to use a variety of skills	26	44	73	21	9	2.67 1.04
Opportunity to work independently	10	55	71	28	8	2.82 0.93
Job in general	10	21	88	40	13	3.15 0.93

Where 5 = most satisfied, 4 = very satisfied, 3 = moderately satisfied, 2= slightly dissatisfied, 1 = not satisfied at all.

## MENTAL HEALTH STATE

Based on the responses from 173 respondents in this study, it was found that most of the workers had a normal mental health state (64.5%) while the prevalence of psychiatric morbidity, indicated by a GHQ-28 score of ≥ 6, was 33.5%. A score of ≥ 2 was considered the threshold for GHQ-28 subscales, and the proportion of respondents meeting this criterion for each of the subscales were as follows; 28.9% for somatic symptom, 29.5% for anxiety and insomnia, 23.7% for social dysfunction, and 12.1 % for severe depression.

Table 2 outlines the GHQ-28 questions and the proportion of responses that scored as better than usual/the same as usual or worse than usual/much worse than usual.

Figure 2

Table 2 Descriptive of GHQ-28 score

Have you recently	n=173			
	Better than usual/same as usual		Worse than usual/much worse than usual	
	No.	%	No.	%
been feeling perfectly well and in good health?	141	81.5	32	18.5
been feeling in need of a good tonic?	139	80.3	34	19.7
been feeling run down and out of sorts?	143	82.7	30	17.3
felt that you are ill?	144	83.2	29	16.8
been getting any pains in your head?	135	78.0	38	22.0
been getting a feeling of tightness or pressure in your head?	138	79.8	35	20.2
been having hot or cold spells?	152	87.9	21	12.1
lost much sleep over worry?	146	84.4	27	15.6
had difficulty in staying asleep once you are off?	142	82.1	31	17.9
felt constantly under strain?	153	88.4	20	11.6
been getting edgy and bad-tempered?	152	87.9	21	12.1
been getting scared or panicky for no good reason?	159	91.9	14	8.1
found everything getting on top of you?	144	83.2	29	16.8
been feeling nervous and strung-up all the time?	146	84.4	27	15.6
been managing to keep yourself busy and occupied?	147	85.0	26	15.0
been taking longer over the things you do?	143	82.7	30	17.3
felt on the whole you were doing things well?	138	79.8	35	20.2
been satisfied with the way you've carried out your task?	138	79.8	35	20.2
felt that you are playing a useful part in things?	144	83.2	29	16.8
felt capable of making decisions about things?	145	83.8	28	16.2
been able to enjoy your normal day-to-day activities?	146	84.4	27	15.6
been thinking of yourself as a worthless person?	160	92.5	13	7.5
felt that life is entirely hopeless?	164	94.8	9	5.2
felt that life isn't worth living?	162	93.6	11	6.4
thought of the possibility that you might make away with yourself?	159	91.9	14	8.1
found at times you couldn't do anything because your nerves were too bad?	157	90.8	16	9.2
found yourself wishing you were dead and away from it all?	166	96.0	7	4.0
found that the idea of taking your own life kept coming into your mind?	162	93.6	11	6.4

Table 3 presents the proportion of the employees' mental health state. The poor mental health indicated by a GHQ-28 score of  $\geq 6$  and a score of  $\geq 2$  is considered the threshold for GHQ-28 subscales.

Figure 3

Table 3 Mental health state of employees

GHQ Subscale	n=173			
	Normal		Poor	
	Number	%	Number	%
Somatic symptom	123	71.1	50	28.9
Social dysfunction	132	76.3	41	23.7
Anxiety and insomnia	122	70.5	51	29.5
Severe depression	152	87.9	21	12.1
General mental health	115	66.5	58	33.5

## THE INFLUENCE OF JOB SATISFACTION ON EMPLOYEES' MENTAL HEALTH

Table 4 describes the correlations between job satisfaction and GHQ-28 score. It was found that overall job satisfaction was significantly and negatively related to somatic symptoms, anxiety and insomnia, social dysfunction, and total GHQ-28 score. The relationships indicated that the workers with a high score of overall job satisfaction were more likely to have low score in all GHQ-28 subscales and total GHQ-28. This means that workers with high overall job

satisfaction are likely to have better mental health.

Conversely, workers with low overall job satisfaction are likely to have poorer mental health.

Regarding the relationship between psychological symptom subscales and the 5 dimensions of job satisfaction, it was noted that severe depression only had a significant relationship with work security. Work security is significantly and negatively related to all subscales of the GHQ-28 and to the total GHQ-28 score. This indicates that as there is more perceived work security, there is a greater likelihood of better mental health. Also, job satisfaction variables of pay are significantly and negatively correlated with somatic symptoms, anxiety and insomnia, social dysfunction, and total GHQ-28 scores.

Figure 4

Table 4 Correlations between job satisfaction and GHQ score

Job satisfaction	GHQ subscale				Total GHQ score
	Somatic symptom	Anxiety and insomnia	Social dysfunction	Severe depression	
Pay	-0.236**	-0.154*	-0.319**	-0.106	-0.275**
Work security	-0.273**	-0.287**	-0.499**	-0.168*	-0.412**
Co-worker	-0.060	-0.028	-0.183*	-0.025	-0.104
Supervision	-0.144	-0.091	-0.216**	-0.033	-0.169**
Promotion opportunity	-0.188**	-0.129	-0.307**	-0.089	-0.242**
Overall job satisfaction	-0.278**	-0.227**	-0.461**	-0.121	-0.369**

\*p<0.05, \*\*p<0.01

To test the influence of job satisfaction on mental health of employees, a multiple linear regression was performed. Demographic variables, 5 dimensions of job satisfaction and overall job satisfaction were entered into the model as the independent variables. Total GHQ-28 score was the dependent variable. The results from multiple linear regressions analysis (Table 5) revealed that 24.5% of mental health state of the workers could be statistically predicted from independent variables (Adjusted  $R^2=0.245$ ,  $F=7.108$ ,  $p<0.001$ ), as presented in Table 5. There was a significant negative correlation for the independent variables of overall job satisfaction ( $\beta = -0.330$ ) and work security ( $\beta = -0.303$ ) and the dependent variable of GHQ-28 score. These findings indicate that an increase in overall job satisfaction and work security are related to better mental health. Conversely, lower overall job satisfaction and work security are related to poorer mental health.



**Figure 5**

Table 5 The influence of job satisfaction on GHQ-28 score by multiple linear regression analysis

Variables	B	S.E.	$\beta$	t	p-value
(Constant)	16.010	2.900		5.520	<0.001
Gender	0.648	0.511	0.087	1.268	0.207
Age	0.487	0.837	0.043	0.581	0.562
Marital status	-0.252	0.819	-0.024	-0.319	0.750
Pay	-1.171	0.849	-0.104	-1.379	0.170
Promotion opportunities	-0.150	0.933	-0.013	-0.160	0.873
Supervisor support	2.109	1.239	0.149	1.703	0.091
Co-worker support	1.234	1.366	0.076	0.903	0.368
Work security	-4.741	1.265	-0.303	-3.747	<0.001
Overall job satisfaction	-4.725	1.392	-0.330	-3.394	0.001

Adjusted R<sup>2</sup> = .245, F=7.108, p<0.001  
Where 1=male and 2= female for gender, 1=living alone and 2=married for marital status

## DISCUSSION

The findings of this study indicated that 33.5% of workers had poor mental health. This finding was consistent with the previous studies which indicate that about 1/3 of workers have poor mental health (27, 28, 11). Mental disorder or distress is a major cause of absence from work, reduction in productivity and elevated staff turnover (7-8). Employers should consider workers' mental health state because it affects not only workers' well-being but also organizational productivity.

Among the 4 symptom domains explored by the GHQ-28, anxiety and insomnia was the most prevalent (29.5%). This finding is consistent with recent studies indicating that insomnia has a prevalence of 16-30% in a daytime working population, making it one of the most commonly reported health problems caused by sleep disorders (29, 30). Psychiatric disorder associated with anxiety, sleep disturbances, and related symptoms have been reported to be prevalent in the community and the workplace. This can be explained by the fact that anxiety and insomnia itself are one of the primary psychiatric disorders. It has been reported to be associated with increased feelings of hostility and fatigue and decreased feeling of joviality and attentiveness, and to correlate negatively with job satisfaction (31). Our present study also found negative correlations between anxiety and insomnia and overall job satisfaction, and satisfaction with pay and work security (see Table 4). Accordingly, certain measures for mental health promotion should be implemented by employers. Workers' mental health problems do not only affect the individual but on an organizational level can also impact productivity.

The findings from the regression analysis indicated a significant negative correlation for the independent variables of overall job satisfaction and work security and the dependent variable of GHQ-28 score. Low satisfaction with work security was associated with poor mental health while

high satisfaction led to better mental health state. This finding is consistent with the study conducted by Virtanen et al. (32) which indicated that low perceived employment security was associated with poor health. Work security refers to working without fear of layoff or change in work situation. According to the economic situation in Thailand, there was an increase in the unemployment rate in 2008, and the fall in industrial production resulted in mass layoffs and reduction of working hours (33). These situations actually affected workers' work security leading to low satisfaction with work security that might lead to anxiety which could affect their state of mental health.

Additionally, overall job satisfaction significantly correlated with employees' mental health state. Employees with high job satisfaction tended to have better mental health than those who had low job satisfaction. This relationship can be explained by job satisfaction, which is an attitudinal variable, reflecting how people feel about their job overall as well as various employment-related aspects (10). Job satisfaction may be influenced by both positive and negative effects (34). This last statement could be supported by a typical day in the life of people; 8 hours for work, 1 hour for commute to work, 3 hours for watching TV or relaxation, 8 hours for sleep, 2 hours for preparing and eating, and 2 hours for others. With the possible exception of sleeping, people spend more time at their jobs than at any other activities in life. Thus, it makes sense that people who are happy with and productive at their jobs will lead more fulfilling lives than those who are not happy with their jobs. Therefore, if people are unsatisfied with their jobs, the residual effects of this dissatisfaction will affect the quality of life as well as health. This is supported by a study (9), where job satisfaction was the factor most associated with mental health problems. The findings suggested that job satisfaction level is an important factor influencing workers' health. The strong relationship between job satisfaction and the level of workers' mental health might be derived from a person's satisfaction in work, which has been regarded as an important part of life. In fact, it is related to a person's general life satisfaction (3-5, 35-37). Hence, the level of workers' job satisfaction is one of the major variables which can be employed to predict their mental health.

## LIMITATIONS

The limitations of the study sample need to be considered. The sample did not have a near perfect response rate. The non-responders were asked to give the main reason why they did not return their questionnaire. Mostly the answer was

that they did not have enough time to complete the questionnaire because they had to work outside the workplace (most of the non-responders worked in the department of marketing), suggesting that they might experience different satisfaction with their job or had a different mental health state. Moreover, the results indicate that increased job satisfaction is related to better mental health. However, on the other hand, it may be that people with mental health disorders enjoy working less or find work more difficult and therefore have a reduced job satisfaction. This point may affect the results and should be concerned for further study.

Also, the Thai GHQ-28, a mental health assessment form, was used to initially identify workers' mental health problems—whether such a person has a mental health problem or not. However, this cannot be used to specify any psychological symptoms. Lastly, this survey was conducted at only one factory. Further research in large samples across a variety of industries is necessary for greater generalization.

### CONCLUSIONS

The findings indicated that about 1/3 of workers had mental problems. Accordingly, certain measures such as a mental health survey and a mental health promotion program should be provided for workers. In addition, assistance should be provided for workers who have some mental health problems, not only to identify the causes but also to provide some guidelines for solving their mental health problems. Satisfaction with work security and overall job satisfaction can be used to predict workers' mental health. Therefore, organizations should look into their policies about work security to help reassure their workers to feel secure working in the organization. In addition, there should be a survey of both job satisfaction and factors affecting job satisfaction to obtain certain information which could be used to develop job satisfaction and thus enhance mental health.

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