



Job Dissatisfaction and Its Related Factors among Laboratory Staff

*Nehzat FADAEI¹, *Zainuddin HUDA¹, Syed Tajuddin SYED HASSAN²*

1. Dept. of Community Health, Faculty of Medicine & Health Sciences, University Putra Malaysia, Serdang, Selangor Darul Ehsan, Malaysia
2. Dept. of Medicine, Faculty of Medicine & Health Sciences, Universiti Putra Malaysia, Serdang, Selangor Darul Ehsan, Malaysia

***Corresponding Author:** Email: hidazai@upm.edu.my

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Abstract

Background: The purpose of this study was to determine the prevalence of job dissatisfaction, and to ascertain the association between job strain and job dissatisfaction and socio-demographic and occupational factors among laboratory staff of Universiti Putra Malaysia (UPM).

Methods: This cross-sectional study was conducted among 450 research laboratory staff in 10 faculties and 8 institutes of Universiti Putra Malaysia. Probability appropriate to size sampling and simple random sampling method were used and data were collected via Job content Questionnaire (JCQ) from September 2012 to February 2013. SPSS (version 20.0) software was used for data analysis.

Results: A total of 285 laboratory staff with at least one year job tenure participated in this study (Response rate: 91.3%). The finding revealed that 47% of laboratory staff reported job dissatisfaction. The results of this survey showed laboratory staffs with age 35, and less were two-fold more likely to report job dissatisfaction than the older staff (adjusted OR= 2.108, 95% CI: 1.241- 3.582). Laboratory staffs with higher toxic exposures 2 times more likely to report job dissatisfaction (adjusted OR= 1.887, 95% CI: 1.062-3.353).

Conclusion: There is a need to have training plans to increase the knowledge on toxic exposures among younger laboratory staff, which may be helpful to reduce job dissatisfaction among them.

Keywords: Job dissatisfaction, Laboratory staff, JCQ, UPM

Introduction

One of the most important parts of social life that provides worker's well-being (social support, self-confidence, security and control) is working life (1). Some surveys showed job strain affect personal relationship, and increase job dissatisfaction among employees (2).

Job dissatisfaction occurs due the employees' perception of work environment such as wage, working conditions, interpersonal relations and company policies (3). Some issues such as inadequate education, inefficient interpersonal relationship, to

have a low skill create job dissatisfaction among personnel in work environment (4). Job dissatisfaction among workers contributes to costly labor disputes, turnover, and risk to patients (5). Several investigations have been conducted to study prevalence of job dissatisfaction and its associated factors. Numerous surveys in the literature have described a range of factors that are related with job dissatisfaction. Since, an investigation among Malaysian lecturers who worked at school of medical sciences, illustrated a prevalence of job dissatisfac-

tion of 42% (6). According to a survey among medical laboratory technicians (MLTs) in Kuwait, the prevalence of job dissatisfaction among MLTs was 44% (7). Outcomes of a study among health workers (lab technician and lab technologist were included) illustrated the highest level of job dissatisfaction (70%) among workers with 25-29 years old (8). Social support is a factor that affects job dissatisfaction; therefore, a significant relationship between job dissatisfaction and low social support was reported among general practitioners (9). Some chemical and toxic materials create job dissatisfaction among chemical company workers. Therefore, toxic exposures and hazardous conditions are the other factors, which have effects on job dissatisfaction (10). A significant association between hazardous work conditions and low job satisfaction was found among labors of a factory in Iran (Hamadan) (11). Laboratory staffs play an important role in scientific investigation and experiments, publishing scientific articles and upgrade the university level. Therefore, the job characteristics and job scope has become more challenging. Therefore, determining the prevalence of job dissatisfaction and its related risk factors among laboratory workers who work at university's laboratories as a researchers or co-researchers is a considerable issue, since it is very important that the universities understand the needs of its employees and provide what is best for the employees

The aim of this study was to determine the prevalence of job dissatisfaction among laboratory staff of Universiti Putra Malaysia and examine the risk factors of job dissatisfaction among them.

Materials and Methods

This cross sectional study was carried out in 2013 in Universiti Putra Malaysia (UPM), located in the state of Selangor Darul Ehsan, Malaysia. This survey was conducted among all laboratory staff (n=450) of research laboratories of UPM. Ten faculties and 8 institutes that have research laboratory staff out of a total of 16 faculties and 9 institutes were included in this study. Probability ap-

propriate to size sampling and simple random sampling method, by using the table of random numbers in the random sampling method was used in this study. Based on the sample size formula 312 laboratory staff was selected randomly in this study out of 450 staff. Two hundred and eighty five laboratory staff filled the questionnaire forms. To select the laboratory staffs in each faculty or institute, table of random numbers was used.

Framingham version of Job Content Questionnaire (JCQ's recommended format) of the validated and reliable JCQ, in English and Malay language, excluding job insecurity items, and non-job stressor's personality scales, was used in this research. The JCQ is a self-administered instrument designed for assessing the content of respondent's work tasks (12). The questionnaire was distributed manually in selected faculties/institutes during faculties' and institutes' working hours among selected respondents. The researcher was present during administration to answer any questions. The questionnaires were collected on the same day. Likert scale was used in the study to indicate selection of possible answers from 'strongly disagree' (scale-1) to 'strongly agree' (scale-4). Socio demographic data including age, gender, race, marital status and education level were added to the questionnaire. Job factors consist of – job title, duration of present job and working hours were included. All variable measures and outcome measures were calculated using the formula for job content questionnaire scale construction provided in the JCQ manual.

Data was analyzed using the Statistical Package of Social Science (Version 20.0. IBM. USA). Descriptive statistical analysis was used to summarize and explain the characteristics of both dependent and independent variables (median was used to categorize social support because the distribution of social support was not normal). Mean was used to categorize all other occupational factors (job strain, physical exertion, hazardous conditions, and toxic exposures) because they had normal distribution. The level of statistical significance was set at 0.05. Mean cut-off point for job dissatisfaction was used to categorize respondents into high and low

job dissatisfaction in order to determine the prevalence. The predictors of job dissatisfaction were determined by using logistic regression analysis. Both models were examined by Hosmer and Lemeshow Goodness-of-fit test. Cox and Snell R square and Nagelkerke R square were determined to explain the model.

Results

A total number of 285 participants responded to the questionnaire, giving a response rate of 91.3% where 13 laboratory staffs of chosen sample size did not agree to respond to the questionnaire, and 14 laboratory staffs did not return the questionnaire. Table 1 illustrates that the age range of the respondents was 23-58 years where majority (56.5%) were 35 years and below. Most (96.1%) laboratory staffs were Malay, female (51.9%) and

married (84.9%). Work experience ranged from 1 to 35 years where majority (76.5%) has worked for more than 3 years. The job title of most of the respondents was science officer (59.3%). Consequently, the majority of the laboratory staffs (58.6%) had no tertiary education (table 1). Low job dissatisfaction was 53%. The results of simple and multiple logistic regression are summarized in table 2. Simple logistic regression showed there was significant association between age and the reporting of job dissatisfaction (crude Odd Ratio= 2.170, 95% Confidence Interval: 1.343-3.507). Respectively, there was a significant association between social support and the reporting of job dissatisfaction (crude OR= 0.525, 95% CI: 0.305-0.904), and laboratory staff with lower social support complained of higher job dissatisfaction as compared with other laboratory staff.

Table 1: Distribution of the respondents according to socio-demographic factors

Factors	Frequency	Percentage (%)	Mean (SD)	Median (IQR)	Min ¹	Max ²
Age (yr)			36.93 (9.6)	34.00 (16.50)	23	58
≤35	161	56.5				
>35	124	43.5				
Work Experience			9.75 (8.91)	6 (8)	1	35
≤3	67	23.5				
>3	218	76.5				
Gender						
Male	137	48.1				
Female	148	51.9				
Marital status						
Single	43	15.1				
Married	242	84.9				
Job title						
Science officer	169	59.3				
Lab Assistant	116	40.7				
Educational Level						
Tertiary education	118	41.4				
Non Tertiary education	167	58.6				
Race						
Malay	274	96.1				
Non Malay	11	3.9				

¹Minimum

²Maximum

A significant relationship was found between the reporting of job dissatisfaction and toxic exposures (crude OR= 2.531, 95% CI: 1.565- 4.093, $P=0.001$). Consequently, there was a significant association between hazardous conditions and the reporting of job dissatisfaction (crude OR= 2.273, 95% CI: 1.408- 3.671, $P=0.001$). Then, laboratory staffs with high level of hazardous conditions were more likely to report job dissatisfaction. Based on the results of multiple logistic regression there was a significant relationship with age and the reporting of job dissatisfaction (adjusted OR= 2.108, 95% CI: 1.241- 3.582) among laboratory staffs of UPM. Furthermore, a significant relationship was found between job dissatisfaction and toxic exposures (adjusted OR= 1.887, 95% CI:

1.062-3.353). The Hosmer and Lemeshow test results indicates the goodness of fit is satisfactory ($\chi^2= 5.711$, $df= 8$, $P= 0.680$). Furthermore, it has been found that job dissatisfaction is closely related with some factors such as age, and toxic exposures. Therefore, the equation of the logistic regression model derived from the analysis was as follow: $\text{Log } Y = -2.118 + 0.746(X_1) + 0.635(X_2) + \epsilon$ Where, $Y =$ job dissatisfaction, $X_1 =$ Age (<35), $X_2 =$ Toxic exposures, $\epsilon =$ Error.

This model explains 14.6% to 19.5% of variance of job dissatisfaction among laboratory staffs in UPM as shown by Cox and Snell R square and Nagelkerke R square values.

Table 2: Association between job dissatisfaction, occupational factors and socio-demographic factor

Factors	Job dissatisfaction			
	Crude OR	P-value ^a	Adjusted OR	P-value ^b (CI: 95%)
Age				
>35	1			
≤35	2.170	0.002*	2.108	0.006*
Social Support				
High	1			
Low	0.525	0.020*		
Toxic exposures				
Low	1			
High	2.531	0.001*	1.887	0.030*
Hazardous Conditions				
Low	1			
High	2.273	0.001*		

OR: Odd Ratio/^a: Simple logistic regression/^b: Multiple logistic regression/*:Significant at level $P<0.05$

Discussion

Majority of the research laboratory staff (55.3%) that perceived job dissatisfaction were in younger age group (less than 35 years old). A significant relationship between age and job dissatisfaction was reported by Lamont (13). Based on Lamont's study the most important reason of job dissatisfaction among younger age groups and older groups was received intrinsic rewards, although both of age groups experienced job dissatisfaction (13). The researcher observed, the younger labora-

tory staffs had less job experience than other staffs, for example, they should repeat some of activities in related their job more than others do. It could be a reason that job satisfaction among younger laboratory staff in UPM is lower than older staffs.

Only 26.7% of the laboratory staffs reported good social support, where majority (64.5%) of them, which had good support, did not perceive job dissatisfaction. This is similar to other study that found that lack of supervisor support to be significantly related with job dissatisfaction (14).

The finding of this study showed there was a significant relationship between job dissatisfaction and toxic exposures among research laboratory staffs of UPM. Majority (57.5%) of laboratory staffs who had problem with toxic exposures reported high job dissatisfaction in their work environment. These results were supported by a study that reported air quality, radiations, chemical factors (included; dangerous and harmful liquid, solid, or gas chemical), and biological factors (such as; catching diseases from microbes) are significantly associated with decreasing job satisfaction among respondents Kilic and Selvi (15). In this study, the researcher found that 56.1% of the respondents who perceived hazardous conditions at work environment had experienced job dissatisfaction, and hazardous conditions were significantly related with job dissatisfaction among UPM research laboratory staffs. However, injuries because of hazardous work conditions were associated with job dissatisfaction.

Conclusions

Prevalence of job dissatisfaction was 47% therefore, almost half of the UPM laboratory staffs complained of job dissatisfaction. The factors that were significantly associated with the reported job dissatisfaction were age and toxic exposures, but age had the greatest influence on job dissatisfaction. The level of job dissatisfaction affects quality of research outcomes among laboratory staff. The results showed toxic exposure and younger age group are two important factors that are associated with job dissatisfaction among UPM laboratory staff. Therefore, introducing the work environment to the younger laboratory staffs, educating them (with workshops etc.) training on their tasks were likely to help to reduce job dissatisfaction among laboratory staffs in UPM. Furthermore, training on occupational health and safety and promotion on personal protective equipment may reduce the worries of toxic exposures at workplace and thus, reduce job dissatisfaction among laboratory staffs.

Ethical consideration

The Medical Research Ethics Committee of Faculty of Medicine and Health Science, UPM, has given an approval to the researcher to conduct the study among UPM's laboratory staff. An agreement for using JCQ was obtained from JCQ center. A formal approval letter also obtained from deans of selected faculties, and institutes at UPM. The authority and the respondents were explained about the objective of the study, the method that was used, and who will have the right to access to the results. Respondents were free to decide whether they want to get involved in the study or not. Written informed consent was obtained from the respondents. To ensure the confidentiality and truthfulness in answering the questions, the following steps were ensured by researcher:

- i. Code numbers were used for the questionnaire.
- ii. The respondent's honesty during interview was emphasized.
- iii. Laboratory staffs were assured that their responses would be kept confidential.

More ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

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