

PSYCHOLOGICAL MEDICINE

Extent and Sources of Anxiety among Employees Attending a University Hospital Clinic

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ABSTRACT

Objective: To study the extent and sources of anxiety among employees of Universiti Sains Malaysia.

Methods: This was a cross-sectional study over a period of 4 months. A total of 300 employees of Universiti Sains Malaysia attending the staff clinic was recruited and given self-administered questionnaires including the Hospital Anxiety and Depression scale (HADS), Job Stress Scale and Life Event Scale to assess anxiety, job stress and life events, respectively.

Result: The prevalence of anxiety among employees attending the staff clinic were 14.3% overall, 18.5% for males and 10.4% for females. Using multiple logistic regression, 4 independent variables were noted which include number of children, LCU score, relationship with supervisor and gender.

Conclusion: The prevalence of anxiety among employees attending the staff clinic was comparable to other similar studies. The strongest predictor of anxiety in this study was poor relationship with superior with OR 9.58. This was followed by life events (i.e., high LCU scores) with OR 6.52 and number of children 5 or more with OR 3.40.

KEY WORDS

anxiety, employee, life event, relationship with superior, job stress

INTRODUCTION

The pivotal role of mental health of employee toward their overall health is increasingly being recognized. Mental health issues can be a contributory factor to a range of physical illnesses including hypertension, diabetes and cardiovascular conditions, amongst others. In addition, it can also lead to burnout amongst employees, seriously affecting their ability to contribute meaningfully in both their personal and professional lives¹.

Work-related stress is a major cause of poor productivity and human error. This means increased sickness absence, high staff turnover and poor performance in the organization and a possible increase in accidents due to human error. It could also manifest as heart disease, back pain, headaches, gastrointestinal disturbances or various minor illnesses; as well as psychological effects such as anxiety and depression, loss of concentration and poor decision making².

Mental health issues affect employers and businesses directly through increased absenteeism, reducing productivity and profits, as well as an increase in costs to deal with them³. In the UK, it is estimated that around 30-40% of the sickness absence is attributable to some form of mental illness. While in the Netherlands, around 58% of the work-related disabilities are related to mental health⁴. In Malaysia workforce, the time lost to sickness absence was estimated to be 1.60, 1.63 and 2.94 days in a year in government, semi-government and private agency, respectively⁵.

The number of university in Malaysia has increased tremendously in the past few years. As the universities are now setting new goals to achieve better academic ranking, the university staff could face plenty of challenges leading to increased job stress and reduced job satisfac-

tion⁶. Nevertheless, university employees are a relatively under-researched population, with the primary focus to date being student health and wellbeing⁷. Therefore, this study aimed to study this population in order to gather invaluable data concerning the extent and sources of anxiety including job stress among the employees of a public university.

METHODS

Study setting and subjects

This is a descriptive cross-sectional study. All categories of workers attending health center in Hospital Universiti Sains Malaysia from December 2001 to March 2002 were invited to participate in the study. A minimum sample size of 250 was determined using a single proportion formula. All the subjects were cooperative, literate and able to understand the Malay language. Those with evidence of organic brain syndromes, history of substance abuse, known case of severe mental illness such as schizophrenia or bipolar disorders, or already under follow-up at psychiatric clinic for any treatment including counseling or psychotherapy were excluded from the study. The respondents were given all the questionnaires while they were attending the staff clinic.

Measurements

a. The Hospital Anxiety and Depression Scale (HADS). The HADS is a brief 14-item self-report questionnaire that is widely used to assess the levels of anxiety and depression among patients in non-psychiatric

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Table 1. Socio-demographic characteristics of anxious vs. non-anxious employees

variables	HADS-A ≥ 9 (n = 43) N (%)	HADS-A < 9 (n = 257) N (%)	P value
Age (years)			
< 30	17 (39.5)	69 (26.8)	0.170
30-40	21 (48.8)	137 (53.3)	
> 40	5 (11.6)	51 (19.8)	
Gender			
Male	27 (62.8)	119 (46.3)	0.049
Female	16 (37.2)	138 (53.7)	
Ethnic group			
Malay	43 (100.0)	250 (97.3)	0.599
Non Malay	0 (0.0)	7 (2.7)	
Education			
Primary	11 (25.6)	79 (30.7)	0.594
Secondary	32 (74.4)	17 (68.1)	
Tertiary	0 (0.0)	3 (1.2)	
Marital status			
Single	5 (11.6)	51 (19.8)	0.439
Married	37 (86.0)	200 (77.8)	
Divorced/ widow	1 (2.3)	6 (2.3)	
No. of children			
0-2	21 (48.8)	148 (57.6)	0.029
3-4	10 (23.3)	77 (30.0)	
≥ 5	12 (27.9)	32 (12.5)	
Occupation			
Professional group	2 (4.7)	10 (3.9)	0.562
Support group 1	10 (23.3)	79 (30.7)	
Support group 2	30 (69.8)	154 (59.9)	
Others	1 (2.3)	14 (5.4)	

Table 3. Logistic regression model for predictors of anxiety

Risk factors	Beta	Wald	P value	Odd ratio (OR)	Confidence interval (CI)
no. of children	1.224	6.998	0.008	3.40	1.373-8.420
LCU score	1.875	13.452	< 0.001	6.52	2.394-17.754
Relationship with supervisor	2.259	15.234	0.036	9.58	3.079-29.771
Gender	-0.801	4.400	< 0.001	0.45	0.213-0.949

hospital or clinic⁹). It can be administered to patients in approximately 5 0 minutes. The scores are then summed to produce two subscales corresponding to Anxiety (HADS-A), and Depression (HADS-D). An overall total can be derived to indicate the level of psychological distress. Cut-offs between 8 and 10 has been advocated for 'possible cases', and scores of 11 or more for 'definite cases'. The HADS is a valid and reliable screening instrument for mental health problems. It was demonstrated that the HADS is a more consistent measure for detecting generalized anxiety disorder (sensitivity ranging from 59 to 93%, and specificity ranging from 73 to 90%), compared with depressive disorders (sensitivity ranging from 14 to 90%, and specificity from 73 to 100%). The combined HADS scores perform similarly in detecting either depressive or anxiety disorders with sensitivity ranging from 20 to 92%,

Table 2. Health status, psychosocial and work related risk factors of anxious vs. non-anxious employees

variables	HADS-A ≥ 9 (n = 43) N (%)	HADS-A < 9 (n = 257) N (%)	P value
History of medical illness			
Yes	2 (4.7)	19 (7.4)	0.749
No	41 (95.3)	238 (92.6)	
History of surgical operation			
Yes	6 (4.0)	30 (11.7)	0.618
No	37 (86.0)	227 (88.3)	
Physical health status			
Good	20 (46.5)	130 (50.6)	0.294
Fair	19 (44.2)	117 (45.5)	
Bad	4 (9.3)	10 (3.9)	
Mental health status			
Good	21 (48.8)	147 (57.2)	0.036
Fair	17 (39.5)	102 (39.7)	
Bad	5 (11.6)	8 (3.1)	
Job stability			
Yes	35 (81.4)	234 (91.1)	0.062
No	8 (18.6)	23 (8.9)	
Relationship with superior			
Good	34 (79.1)	248 (96.5)	< 0.001
Poor	9 (20.9)	9 (3.5)	
Work achievement			
Yes	35 (81.4)	223 (86.8)	0.346
No	8 (18.6)	34 (13.2)	
Someone to talk to			
Yes	11 (25.6)	36 (14.0)	0.068
No	32 (74.4)	221 (86.0)	
Major life event			
Yes	9 (20.9)	35 (13.6)	0.243
No	34 (79.1)	222 (86.4)	
LCU score			
< 150	6 (14.0)	109 (42.4)	< 0.001
150-300	14 (32.6)	86 (33.5)	
> 300	23 (53.5)	62 (24.1)	
Job stress category			
Positive	21 (48.8)	80 (31.1)	0.035
Negative	22 (51.2)	177 (68.9)	

and specificity from 74 to 95%. Although the HADS was originally developed to identify caseness of anxiety disorders and depression among patients in non-psychiatric hospital clinics, the questionnaire also performs well in assessing the symptom severity and caseness of anxiety disorders and depression in somatic, psychiatric and primary care patients and in the general population⁹. The Malay version of HADS was available and used in this study¹⁰.

b. Job Stress. Each of the 20 items is self-rated from 0 (never) to 4 (almost always). Scores of 0-25, 26-40, 41-55 and 56-80 indicate adequate coping with job stress, suffering from job stress and would be wise to take preventive action, needing to take preventive action to avoid job burnout and suffering from job burnout, respectively¹¹.

c. Life Event Scale. This self-administered questionnaire containing a list of 43 events to which subjects respond by checking those events that they have experienced during the recent past (previous 6 months or 1 year). To determine the scoring weight for specific events, Holmes and Rahe (1967) had a large group of subjects rating each of the 43 items with regard to the amount of social readjustment that the various events required. The item *marriage* (assign value of 500) was used as an arbitrary standard or anchor point for making ratings. Mean value was

obtained for each of the item. These mean values (divided by the constant of 10) were taken to represent the average amount of social readjustment required by the events. The values termed *life change unit*, when summed yield a total life stress score^{12,13}.

Statistical analysis

Data entry and analysis were done using SPSS software. The chi-square test was used to assess the association between psychological distress, anxiety, and categorical factors. Stepwise logistic regression analysis was used when multiple variables were considered simultaneously. All the independent variables were entered into the model using stepwise multiple logistic regression with entry criteria of $p < 0.05$

RESULTS

None of the employees approached during the study refused to participate and thus all were recruited into the study. However, 12 of them were excluded from the analysis due to incomplete data giving the final number of sample at 300. Males and females were equally represented in this study, females accounting for 146 (49%) and males 154 (51%). Majority were in the age group 30-40 and less than 30 years old accounting for 158 (52%) and 86 (29%), respectively. About 19% were more than 40 years old. Majority were Malays. Other ethnic group included 5 Chinese, 1 Indian and 1 Siamese. 237 (79%) were married, 56 (19%) were single and 7 (2%) were divorced or widow. Secondary education as their highest education in 207 (69%) of samples. 90 (30%) received tertiary education. With regard to life events, the sample were divided into 3 categories in which, 115 (38.3%) scored < 150 LCU, 100 (33.3%) scored 150-300 LCU and 85 (28.3%) scored > 300 LCU indicating 1-in-3 chance of serious health change, 50-50 chance of experiencing a serious health change within 2 years and high risk of developing a health problem, respectively. The 5 most frequent life events were celebrating *Hari Raya Puasa*, change in financial state, vacation, change in living condition and gain in a new family member.

The prevalence of anxiety was 14.3% in which 43 out of 300 respondents scored 9 and above on the HADS-A. The remaining 257 (85.7%) respondents scored below 9 and were considered as non-anxiety group. The prevalence job stress was 34.0% accounting for 102 out of 300 respondents. Among them, 91 (30.3%) were suffering from job stress but still able to function, 10 (3.3%) need to take precaution to prevent job burnout and 1 (0.3%) had already burnt out from the job stress.

Independent variables possibly associated with anxiety were entered into the logistic regression model. The variables were number of children, LCU score, mental health status, gender and job stress category. The independent variables were entered stepwise into the logistic regression model. In the final model, 4 independent variables were noted: number of children, LCU score, relationship with supervisor and gender. The strongest predictor for anxiety was poor relationship with supervisor which increased the likelihood to have anxiety by 10 times. There was no significant correlation between those 4 variables.

DISCUSSION

Using of 8/9 as cut-off points for HADS-A in this study, the prevalence of anxiety among HUSM employee was 14.3% overall, 18.5% for males and 10.4% for females. In a similar study conducted in the Netherlands, the data from 7,482 employees participating in the epidemiological Maastricht Cohort Study on Fatigue at Work revealed anxiety prevalence of 8.2% for males and 10% for females. The anxiety prevalence for overall and males were higher in this study, but was similar for females. This may be due to differences in recruitment strategy. In this study, the sample was from those employees attending the staff clinic. In contrast, in the Netherlands study was a large prospective study over a 3-year duration involving a total of 12 140 employees from 45 different companies and organisations at the baseline⁴. In another study of 1,141 female workers at an electrical appliance manufacturing plant using the Korean version of the Beck Anxiety Inventory, the prevalence of anxiety symptoms was 15.2% and was significantly associated with poor sleep quality¹⁵.

In this study, poor relationship with superior was the strongest predictor of anxiety with OR of 9.58. This is consistent with several studies

which had identified this factor as contributing to the anxiety. In a longitudinal survey in a Japanese electronics company, 'poor relationship with superior' had the largest hazard ratio (CI) of 1.51 (1.06 .15) among workers who complained of perceived job stress¹⁶. In a 2 year cohort study involving 782 workers at a precision machine production company, 'poor relationship with superior' had a significant mental health only in women, with an adjusted OR (95% CI) of 3.79 (1.65 to 8.73)¹⁷. Additionally, a cross-sectional study involving 1086 employees of a Quebec university, found the relationship with one's superior was among 3 factors systematically reported as high risks to employees' health. The other 2 factors were work overload and participation in decision making¹⁸.

Dealing with difficult superiors are common reason for office stress. It can be solved by improving communication skills. Sometimes, the superior may set unreal targets, where an honest discussion can bring out what deadlines can be met. Tasks that are not part of an employee role or skill set can also cause stress. Employees are often made to multitask which could affect their ability to deliver. Communicating with superiors about this matter at the earliest is the best way to resolve this.

The second predictor of anxiety was LCU score with OR 6.52. This goes well with the general knowledge that increasing amount of life events, whether they were viewed as positive or negative, is associated with increased risk of anxiety. For example, it was noted that stressful life-event scores were significantly higher in irritable bowel syndrome¹⁹ and Behcet's disease²⁰ patients than in normal controls. In addition, life events has been identified as a predictor for common cold in a number of studies²¹⁻²³.

The third predictors of anxiety in this study were number of children 5 or more with OR of 3.40. In general, every family is struggling to cope with an increasingly complex world. Individuals are struggling to find the right balance between work and family responsibility. Domestic issues can affect work where balancing work and home by allotting adequate time for both can help reduce stress.

Finally in this study, males were more likely to have anxiety compared to females. This is in contrast to international data that stated anxiety is more common among females. One of the factors that could contribute to the above results was that the male employees in this sample had more burden from their family compared to female employees. Majority of them worked as support group II and some of them were the breadwinners in the family. Therefore, in term of financial support, female workers are more stable that could lead to less stress compared to male workers.

CONCLUSIONS

In conclusion, the prevalence of anxiety among employees attending the staff clinic were 14.3% overall, 18.5% for males and 10.4% for females. The predictors of anxiety in this study were poor relationship with superior (OR 9.58), high LCU scores (OR 6.52) and number of children 5 or more (OR 3.40). The results would assist in planning of services, allocation of resources and training of personnel while providing better patient care.

REFERENCES

- Richardson KM. Managing Employee Stress and Wellness in the New Millennium. *Journal of Occupational Health Psychology* 2017.
- Holden L, Scuffham PA, Hilton MF, *et al*. Health-related productivity losses increase when the health condition is co-morbid with psychological distress: findings from a large cross-sectional sample of working Australians. *BMC Public Health* 2011; 11: 417.
- Chopra P. Mental health and the workplace: issues for developing countries. *International Journal of Mental Health Systems* 2009; 3: 4.
- Evans-Lacko S, Knapp M. Global patterns of workplace productivity for people with depression: absenteeism and presenteeism costs across eight diverse countries. *Social Psychiatry and Psychiatric Epidemiology* 2016; 51(11): 1525-1537.
- Indran SK, Gopal RK, Omar A. Absenteeism in the Workforce, Klang Valley, Malaysia - Preliminary Report. *Asia-Pacific Journal of Public Health* 1995; 8(2): 109-13.
- Ahsan N, Abdullah Z, Fie DG, Alam SS. A study of job stress on job satisfaction among university staff in Malaysia: Empirical study. *European Journal of Social Sciences* 2009; 8(1): 121-31.
- Mohseni Saravi B, Kabirzadeh A, Rezazadeh E, *et al*. Prevalence and Causes of

- Medical Absenteeism Among Staff (Case Study at Mazandaran University of Medical Sciences: 2009-2010). *Materia Socio-Medica* 2013; 25(4): 233-237.
- 8) Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica* 1983; 67(6): 361-70.
 - 9) Bjelland I, Dahl AA, Haug TT, Neckelmann D. The validity of the Hospital Anxiety and Depression Scale: an updated literature review. *Journal of Psychosomatic Research* 2002; 52(2): 69-77.
 - 10) Yahya F, Othman Z. Validation of the Malay Version of Hospital Anxiety and Depression Scale (HADS) in Hospital Universiti Sains Malaysia. *International Medical Journal* 2015; 22(2): 80-82.
 - 11) Davis M, Eshelman ER, McKay M. The relaxation and stress reduction workbook. New Harbinger Publications; 2008 May 3.
 - 12) Holmes TH, Rahe RH. The Social Readjustment Rating Scale. *Journal of Psychosomatic Research* 1967; 11(2): 213.
 - 13) Hobson CJ, Kamen J, Szostek J, *et al.* Stressful life events: A revision and update of the social readjustment rating scale. *International Journal of Stress Management* 1998; 5(1): 1-23.
 - 14) Andrea H, B tmann U, Beurskens AJ, *et al.* Anxiety and depression in the working population using the HAD Scale. *Social Psychiatry and Psychiatric Epidemiology* 2004; 39(8): 637-46.
 - 15) Lee KH, Chae CH, Kim YO, *et al.* Anxiety symptoms and occupational stress among young Korean female manufacturing workers. *Annals of Occupational and Environmental Medicine* 2015; 27(1): 24.
 - 16) Shigemi J, Mino Y, Ohtsu T, *et al.* Effects of perceived job stress on mental health. A longitudinal survey in a Japanese electronics company. *European Journal of Epidemiology* 2000; 16(4): 371-6.
 - 17) Mino Y, Shigemi J, Tsuda T, *et al.* Perceived job stress and mental health in precision machine workers of Japan: a 2 year cohort study. *Occupational and Environmental Medicine* 1999; 56(1): 41-5.
 - 18) Biron C, Brun JP, Ivers H. Extent and sources of occupational stress in university staff. *Work* 2008; 30(4): 511-22.
 - 19) Pinto C, Lele MV, Joglekar AS, *et al.* Stressful life-events, anxiety, depression and coping in patients of irritable bowel syndrome. *JAPI* 2000 Jun 29; 48(6).
 - 20) Karlidag R, Unal S, Evereklioglu C, *et al.* Stressful life events, anxiety, depression and coping mechanisms in patients with Behçet's disease. *Journal of the European Academy of Dermatology and Venereology* 2003; 17(6): 670-5.
 - 21) Cohen S, Tyrrell DA, Smith AP. Negative life events, perceived stress, negative affect, and susceptibility to the common cold. *Journal of Personality and Social Psychology* 1993; 64(1): 131.
 - 22) Evans PD, Edgerton N. Life-events and mood as predictors of the common cold. *Psychology and Psychotherapy: Theory, Research and Practice* 1991; 64(1): 35-44.
 - 23) Takkouche B, Regueira C, Gestal-Otero JJ. A cohort study of stress and the common cold. *Epidemiology* 2001; 12(3): 345-9.
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