

A preliminary study of job satisfaction and motivation among the Malaysian primary healthcare professionals

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Abstract

Aim: This study aimed to examine the relationship between personal or work-based characteristics and job satisfaction and motivation in Malaysian primary healthcare professionals.

Methods: This was a cross-sectional survey conducted during the 15th Family Medicine Scientific Conference in June 2011 using the Warr-Cook-Wall scales. The questionnaires included demography and work-related items and were self-distributed and returned at the end of the conference. Independent risk factors were identified using multiple linear regressions.

Results: A total of 149 conference participants completed the survey, with a response rate of 33.1%. They were mainly females (85.2%), Malay (83.2%), and married (83.9%) in almost equal proportions of practice location (urban 57.8% and rural 42.2%). Majority of them were working at community-based health clinics (74.0%) and in public sectors (94.4%). The respondents were mainly doctors (91.4%). The mean age of the participants was 39.1 years (SD 8.0), with a mean duration of service of 9 years (SD 6.9). Family medicine specialty (FMSt) residents had lower job satisfaction ($B = -8.0$, 95% CI -14.61 to -1.40, $p = 0.02$). Family medicine specialists (FMSs) had higher satisfaction with working conditions ($B = 1.95$, 95% CI 0.50 to 3.41, $p = 0.01$). A male worker had on average 2.8 (95% CI -4.7 to -0.9, $p = 0.005$) lower points in the total intrinsic job motivation scale. There was a positive relationship between the duration of working and job motivation ($B = 0.10$, 95% CI 0.004 to 0.2, $p = 0.04$).

Conclusion: FMSt residents might have the least job satisfaction, but FMSs were generally satisfied with their working conditions regardless of the location of their clinics. Men and those who were novice in primary healthcare may need more support for motivation.

Introduction

Physician satisfaction at work has wide implications on self, others, and the organisation.^{1,2} High job satisfaction amongst physicians was associated with improved doctor-patient relationship and better quality prescribing,³ higher level of medication adherence and lower level of dissatisfaction among patients.^{4,5} On the contrary, job dissatisfaction amongst physicians had been linked to higher level of burnout, mental health problems and suicide.⁶⁻⁸ Physician job dissatisfaction was associated with the intention to resign⁹ and had also been shown to

have significant cost implication on health care organisations in terms of finding replacement for the departing clinician. Buchbinder et al. estimated that the cost of recruitment and replacement for each family practitioner in the United States was USD 236,383, amounting to a staggering USD 24.5 million for 104 physicians in family/general practice over a period of 5 years.¹⁰

Factors that had been identified to increase general practitioners' (GP) job satisfaction were diversity of work, relations and contact with colleagues, and being involved in teaching medical students,¹¹ whereas factors that

decrease job satisfaction were low income, long working hours, administrative burdens, heavy workload, lack of time, and lack of recognition.^{12,13} In 1998, 53% of Australian metropolitan GPs had considered leaving their workplace due to occupational stress, citing “time pressure to see patients” as the most frequent stressor, and threat of litigation that was perceived as the most severe stressor.¹⁴ GPs in the Leeds United Kingdom (UK) reported recent National Health Service (NHS) changes such as excessive working hours, paperwork, and administration as the most stressful aspects of their work.¹⁵ In the United States, the most significant predictors in career satisfaction were clinical autonomy, working hours, and physicians’ ability to obtain services for their patients.¹⁶ GP job satisfaction in the United Kingdom and elsewhere was not much better in later studies.^{16,17}

Numerous theories exist, developed from a wide range of perspectives in postulating a direct link between organisational/workplace stress and well-being.¹⁸ New work practices and rapid technological advances are changing the nature of many jobs.¹⁹ These challenges are especially evident in the changing face of primary health care in Malaysia. Primary health care in this country consists of largely two sectors, namely the public and the private.²⁰ The services provided are comprehensive and complete with in-house pharmacy, radiological, and medical laboratory support. Medical services range from emergency care to chronic disease management, maternal and child health to geriatric care, preventive medicine (e.g., immunisation and school health programme), screening, and rehabilitation of physical as well as mental health disorders (including drug addiction). The private sector is mainly run by a single or a group of general practitioners with undergraduate medical degree providing basic medical services compared to family medicine specialists with postgraduate degree at some of the public health clinics.²¹

A new primary health care system is emerging to replace the present one, in which health financing scheme will be revamped to integrate the public and private sectors. There has been an unprecedented demand on higher professional qualification of the primary care providers and

higher expectations to provide better quality of care, arising from changing disease burden and well-informed general public. These changes in events would inevitably impact job satisfaction and motivation among the primary health care professionals.^{22,23}

As there was paucity of published evidence on job satisfaction and working attitude of the primary health care professionals in this country, this study aimed to investigate the primary health care providers’ job satisfaction, job motivation, self-rated anxiety, and associated socio-demographic factors. It would provide some baseline data for future comparison, and may trigger an initiative of looking into the possible factors for job satisfaction of primary health care providers and means of improving their performance at work. Job satisfaction is defined as “a pleasurable or positive emotional state, resulting from the appraisal of one’s job or job experiences.”²⁴ Motivation is defined as “an individual’s degree of willingness to exert and maintain an effort towards organisational goals.”²⁵

Methods

This was a cross-sectional survey conducted during the 15th Family Medicine Scientific Conference in June 2011. This study did not receive any ethics committee review; nevertheless it conformed to the provisions of the Declaration of Helsinki in 1964 (as revised in Edinburgh 2000). All investigations on human subjects had obtained their informed consent, and participant’s anonymity was preserved throughout the study.

Setting and subjects: All participants of the 15th Family Medicine Scientific Conference were provided with the survey questionnaire together with the study information sheet in an envelope, which was inserted in the conference bag. Primary health care providers from public and private sectors and those working in universities were included. Hospital health care providers and non-Malaysian respondents were excluded. This conference is organised annually and attended by primary care providers from various job categories. Participation was voluntary and confidentiality was ascertained

throughout. Completed survey forms were returned to the conference secretariat at the conference venue in a sealed envelope by the end of the conference.

The Instrument

Independent variables: Data for each primary care provider on his or her personal and job demographic factors served as independent variables. Data on personal and job demographic factors (9 characteristics)—age, sex, ethnicity, marital state, location of practice (urban vs. rural), place of working (health clinic, hospital, university, etc.), public vs. private sectors, professional qualifications (in Malaysia vs. overseas), and the time (in year) spent in primary care—were obtained.

Dependent variables: The Warr-Cook-Wall scale was used to assess job satisfaction (JS) (16 items), job motivation (JM) (6 items), and self-rated anxiety (SRA) (7 items).²⁶ The scale was developed to provide a short, reliable, valid, and easy-to-use measure of work-related attitudes and has been used extensively among various disciplines of health care workers. All the items have seven-point Likert type rating scales assessing the degree of responses ranging from “extremely dissatisfied” (score 1) to “extremely satisfied” (score 7), with 1 being the most negative response in each case. Each scale or subscale score was the unweighed sum of the responses to the included items. The rank-order correlations between item-whole values for each item in a scale average to approximately 0.95, and the test-retest reliability coefficients (r) have been reported (total job satisfaction 0.63). The satisfaction subscales yielded values between 0.45 and 0.68, intrinsic job motivation 0.65 and self-rated anxiety 0.63.²⁶ All the other coefficients are acceptably high, relative to measures in the literature and to the internal homogeneity of the scales.

The wording and phrases of some of the items were modified for easier understanding of their meaning as in local context. For example, in the job satisfaction scale item 9 “Industrial relations between management and workers in your firm” was rephrased to “Working relations

between management and workers in your health centre”, and the self-rated anxiety scale item 6 “Britain’s economic future” was changed to “Malaysia’s economic future”. The scales were pilot-tested for content and face validity on a group of primary health care professionals and general practitioners and were found to be acceptably clear. Table 1 describes the scales in more detail with the Cronbach’s alpha calculated for the internal consistency of the items in this study.

Statistical analyses: Data were entered and analysed with PASW 20.0 (SPSS, Chicago, IL). Continuous variables were tested for statistical significance using the Student’s t-test or analysis of variance (ANOVA). The Bonferroni test of inequality was employed to minimise the risk of type I errors. The test of significance was two-tailed, and the p value of less than 0.05 was considered statistically significant at 95% confidence interval. Bivariate analyses were performed to identify the significant associated factors for multivariate analyses.

Multiple linear regression with stepwise method was used to examine the relationship between independent variables and dependent variables. Multicollinearity was checked with the tolerance range of >0.6 .²⁷ The duration of service is deemed to represent a more meaningful interpretation compared to the age of participants. Independence assumption was satisfied when the Durbin-Watson values were hovering around 2.²⁷ Histogram and normal probability plot were used to check the normality assumptions of the residues. This statistical technique achieves the best linear prediction equation between an independent variable and the dependent variable.

Results

A total of 149 participants completed the survey with a response rate of 33.1%. Table 2 shows the correlation and mean comparison between socio-demography and dependent variables. The mean age of the participants was 39.1 years (SD 8.0, min. 26, max. 63).

They were mainly females (85.2%), Malay (83.2%), and married (83.9%). There were almost equal proportions of respondents practicing at urban and rural areas. Majority were working at public community-based health clinics. They were mainly doctors (91.4%): family medicine specialists (FMS) (41.7%), FMSt residents (13.2%), and medical

officers (36.4%). The mean duration of service in the primary care was 9 years (SD 6.9, min. 0.3, max. 36.0). The mean (SD) scores for job satisfaction, job motivation, and self-reported anxiety were 71.2 (13.3), 37.7 (4.2), and 25.5 (7.7), respectively. The mean (SD) values for each item in each scale are shown in Figures 1-3.

Table 1. The Warr-Cook-Wall Job Satisfaction, Job Motivation, and Self-reported Anxiety Scales

Scale	Description	Cronbach's alpha
Job satisfaction (JS)		
1. Physical work conditions	The degree to which a person reports satisfaction with intrinsic and extrinsic features of the job. Score 1 to 7.	0.91
2. Freedom to choose your own method of working		
3. Your fellow workers	Total job satisfaction is the sum of all individual items.	0.91
4. Recognition you get for good work		
5. Your immediate boss	Intrinsic job satisfaction is the sum of items 2, 4, 6, 8, 10, 12, and 14. It assesses the characteristics or content of the daily work.	0.85
6. The amount of responsibility you are given		
7. Your rate of pay	Extrinsic job satisfaction is the sum of items 1, 3, 5, 7, 9, 11, and 15. This assesses external or environmental conditions of daily work.	0.80
8. Opportunities to use your abilities		
9. Working relations between management and workers in your health centre	Working conditions satisfaction is the sum of items 1, 3, 5, 13 and 15.	0.67
10. Your chance of promotion		
11. The way your work place is managed	Employee relations satisfaction is the sum of items 4, 7, 9, 10, 11, and 12.	0.84
12. Attention paid to suggestions you make		
13. Your hours of work		
14. The amount of variety in your job		
15. Job security		
16. Now, taking everything into consideration, how do you feel about your job as a whole?		
Job motivation (JM)		
1. I feel a sense of personal satisfaction when I do this job well	The degree to which a person wants to work well in his or her job in order to achieve intrinsic satisfaction. Score 1 to 7.	0.81
2. My opinion of myself goes down when I do this job badly		
3. I take pride in doing my job to the best I can		
4. I feel unhappy when my work is not up to my usual standard		
5. I like to look back on the day's work with a sense of a job well done		
6. I try to think of ways of doing my job effectively		
Self-rated anxiety (SRA)		
1. Not having enough money for day-to-day living	The degree to which a person reports anxiety about salient features of his or her life and life-space summed across items, and overall self-rated anxiety is reported anxiety in general. Score 1 to 7.	0.88
2. Your immediate family		
3. Your health		
4. Growing old		
5. How things are going at work		
6. Malaysia's economic future		
7. In general, how worried or concerned do you feel these days?		

Table 2. Correlation and mean (SD) comparison between bio-demography variables and job satisfaction, job motivation, and self-reported anxiety

	Total, n (%)	Job satisfaction	Job motivation	Self-reported anxiety	p
Age	143	0.16#	0.18#	-0.01#	0.059 ^{a*} 0.028 ^{b*} 0.936 ^{c*}
Gender					0.922 ^a
Female	127 (85.2)	71.2 (13.4)	38.1 (4.1)	25.6 (7.6)	0.007 ^b
Male	22 (14.8)	71.5 (13.1)	35.5 (4.3)	25.0 (8.2)	0.772 ^c
Ethnicity					
Malay	124 (83.2)	71.4 (13.3)	37.9 (4.2)	25.5 (7.5)	0.997 ^a
Chinese	19 (12.8)	70.6 (12.3)	35.0 (3.7)	24.8 (8.4)	0.011 ^b
Indian	4 (2.7)	71.0 (22.0)	40.3 (2.9)	31.8 (6.7)	0.119 ^c
Others	2 (1.3)	70.5 (19.1)	41.0 (1.4)	16.0 (2.8)	
Marital status					
Married	125 (83.9)	71.2 (13.6)	38.0 (4.1)	25.4 (7.8)	0.477 ^a
Divorced	3 (2.0)	70.7 (10.5)	36.3 (0.6)	20.7 (1.5)	0.038 ^b
Widowed	3 (2.0)	83.0 (9.0)	40.3 (2.9)	31.0 (3.6)	0.431 ^c
Single	18 (12.1)	69.9 (12.2)	35.2 (4.8)	25.9 (7.6)	
Location of practice					0.392 ^b
Urban	85 (57.8)	70.2 (14.8)	37.5 (4.6)	25.8 (7.6)	0.759 ^b
Rural	62 (42.2)	72.1 (10.9)	37.8 (3.6)	25.1 (7.5)	0.588 ^b
Work place					
Health clinic	108 (74.0)	71.0 (12.2)	37.5 (4.4)	25.2 (7.4)	0.087 ^c
Hospital out-patient	9 (6.2)	62.9 (15.5)	38.1 (3.4)	25.0 (9.0)	0.896 ^b
University/college	22 (15.1)	76.0 (14.3)	38.0 (2.9)	27.2 (8.6)	0.580 ^a
Health office	7 (4.8)	71.1 (16.2)	36.9 (5.8)	28.0 (8.2)	
Sector of working					
Public	136 (94.4)	70.4 (13.0)	37.6 (4.3)	25.8 (7.6)	0.379 ^b
Private	5 (3.5)	75.6 (20.0)	39.8 (3.9)	19.0 (5.5)	0.512 ^c
Others	3 (2.1)	79.0 (13.5)	37.0 (1.7)	22.0 (1.7)	0.104 ^a
Professional qualification					
FMS qualified in Malaysia	60 (40.0)	73.4 (12.9)	38.2 (4.9)	23.7 (7.8)	
FMS/FP qualified overseas	2 (1.3)	55.0 (19.8)	36.0 (0)	24.5 (3.5)	
Resident in FMS	20 (13.3)	66.2 (15.7)	38.4 (2.8)	30.0 (3.5)	0.161 ^b
MO qualified in Malaysia	44 (29.3)	70.5 (12.5)	36.9 (4.1)	24.8 (7.9)	0.297 ^b
MO qualified overseas	11 (7.3)	72.3 (8.7)	38.4 (3.0)	27.7 (7.2)	0.049 ^c
Paramedic	5 (3.3)	78.1 (8.3)	34.4 (2.9)	27.2 (5.6)	
Others	8 (5.3)	70.6 (15.8)	38.6 (3.2)	29.1 (7.8)	
Duration of being in primary care service	146	0.12#	0.17#	-0.02#	a* 0.151 b* 0.037 c* 0.812

FMS, family medicine specialist; FP, family physician; MO, medical officer.

#Pearson correlation, p value for Pearson correlation = a* Job satisfaction, b* Job motivation, c* Self-reported anxiety.

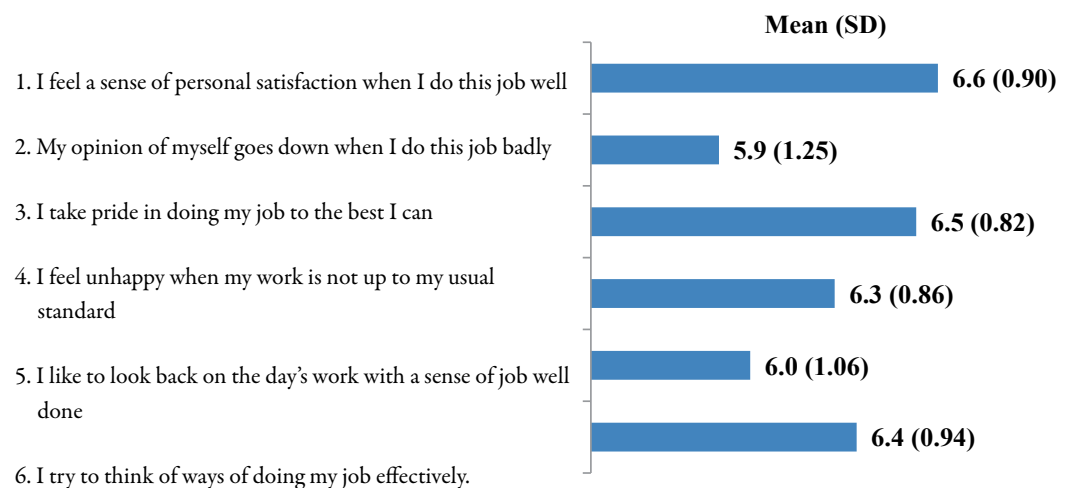
p value of ANOVA= a Job satisfaction, b Job motivation, c Self-reported anxiety.

Figure 1. Mean (SD) score of each item in the job satisfaction scale, n = 149



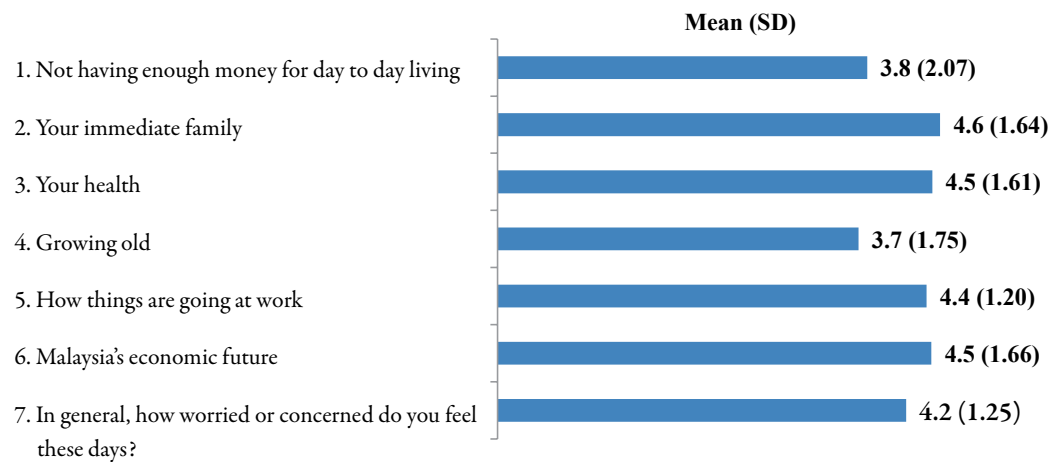
Each item scored 1-7; the higher the score, the higher the satisfaction.

Figure 2. Mean (SD) score of each item in the job motivation scale, n = 149



Each item scored 1-7; the higher the score, the higher the motivation.

Figure 3. Mean (SD) score of each item in the self-rater anxiety scale, n = 149



Each item scored 1-7; the higher the score, the higher the anxiety.

We observed positive correlation between age and extrinsic job satisfaction ($r = 0.21$, $p = 0.014$), age and working condition satisfaction ($r = 0.21$, $p = 0.014$), and between JM and working condition satisfaction ($r = 0.20$, $p = 0.017$). We noticed negative correlations between the SRA and extrinsic job satisfaction ($r = -0.20$, $p = 0.015$), SRA and working condition satisfaction ($r = -0.17$, $p = 0.043$), SRA and employee relation satisfaction ($r = -0.17$, $p = 0.043$).

Table 3 shows multiple linear regressions with stepwise method conducted for JS ($F = 5.74$, $df = 1$, and $n = 136$), extrinsic job satisfaction ($F = 8.05$, $df = 1$, and $n = 136$), working condition satisfaction ($F = 7.04$, $df = 1$, and $n = 136$), employee relations satisfaction ($F = 8.93$, $df = 1$, and $n = 136$), JM ($F = 6.03$, $df = 2$, and $n = 136$), and SRA ($F = 7.81$, $df = 1$, and $n = 137$). It was observed that an FMSt resident compared to other primary health care professionals had on average 8.0 (95% CI -14.6 to -1.4) lower points in the JS scale; an FMS compared to other primary health care professionals had on average 2.0 (95% CI 0.5 to 3.4, $p = 0.009$) higher points in the working condition satisfaction scale; a male worker had on average 2.8 (95% CI -4.7 to -0.9, $p = 0.005$) lower points in the JM scale. This was in contrast to the relationship between the duration (year) of working in a primary care setting and the JM scale ($B = 0.10$, $SE = 0.05$, 95% CI 0.004 to 0.2, $p = 0.04$).

Table 3. Summary of Multiple Linear Regression Statistics for Job Satisfaction, Job Motivation and Self-rated Anxiety

Predictor Variables	B	95.0% Confidence Interval for B		t	p	Adjusted R2
		Lower Bound	Upper Bound			
Dependent Variable: Total Job Satisfaction*, n = 137						
(Constant)	71.891	69.497	74.284	59.398	<0.001	0.03
FMSt Residents (1)	-4.995	-8.477	-1.514	-2.837	0.018	
Dependent Variable: Working Conditions Satisfaction#, n = 137						
(Constant)	24.012	23.099	24.925	52.004	<0.001	0.04
FMS (1)	1.951	0.496	3.405	2.653	0.005	
Dependent Variable: Employee Relations Satisfaction*, n = 137						
(Constant)	27.345	26.182	28.507	46.534	<0.001	0.06
FMSt Residents (1)	-4.845	-8.051	-1.638	-2.988	0.009	
Dependent Variable: Job Motivation#, n = 137						
(Constant)	37.092	35.937	38.246	63.543	< 0.001	0.07
Male (1)	-2.825	-4.768	-0.882	-0.882	0.005	
Duration of working in primary care	0.104	0.004	0.204	2.048	0.043	
Dependent Variable: Self-rated Anxiety*, n = 138						
(Constant)	24.792	23.460	26.123	36.828	<0.001	0.05
FMSt Residents (1)	5.208	1.522	1.522	2.794	0.006	

B = un-standardised beta coefficient, t = t-test, p = significance.

*Adjusted for variables: Duration of being in the primary health care non-hospital setting, Urban (1), Health Clinic (1), FMS (1), Married (1), and Female (1).

#Adjusted for variables: Duration of being in the primary health care non-hospital setting, Urban (1), Health Clinic (1), FMS Residents (1), Married (1), and Female (1).

‡Adjusted for variables: Urban (1), Health Clinic (1), FMS (1), FMS Residents (1), and Married (1).

FMS, family medicine specialist; FMSt, family medicine specialty.

Discussion

This study found that FMSt residents as a group was an independent predictor of job dissatisfaction, employee relation dissatisfaction, and self-rated anxiety. This was in stark contrast to the Texas family practice residents who as a whole had strong job satisfaction with significant differences mainly in terms of the year of residency and place of practice, that is, community based was better than the university based.²⁸ Primary care residents of the US stated that continuity of care, autonomy, collegiality, work that encourages professional growth, and work group loyalty enhanced their satisfaction.²⁹ Unlike these residents, employee relations or collegiality satisfaction was poor among the FMSt residents. We need further studies to confirm this finding and to better elucidate the possible causes of dissatisfaction among FMSt residents. The presence of role conflict,

deficient training programmes, lack of mentorship, long working hours, departmental academic activities, financial constraints, family and emotional problems leading to stress and anxiety could be the possible causes of dissatisfaction.^{30,31} Job satisfaction in FMSt residents is important to ensure their success in the residency programme and in becoming a competent primary care physician.^{32,33} Studies have shown that the satisfaction level of current residents was an important appealing predictor to prospective residents among undergraduate medical students.^{33,34}

FMSs in this country seemed to be satisfied with their physical work conditions, hours of work, job security, fellow workers, and immediate boss. These were indeed very positive attitudes among the FMSs who could have been well adjusted to their working condition over the years since rejoining the public service as specialists.²⁹

Previous studies examining job satisfaction revealed that the following factors are associated with increased job satisfaction: female gender, working in a rural area, not working full time, high job control, and low demands.^{11,35-38} Walker et al. reported that Melbourne female GPs were mostly satisfied with their jobs compared with the male GPs, and their job satisfaction and work longevity may be improved by decreasing administrative burden and increasing work-based supports and remuneration.³⁹ Occupational isolation, that is, lack of professional and community collaboration, had been associated with job dissatisfaction amongst Finland GPs.⁴⁰

In this study, job motivation was significantly low among the men and those who were new to primary health care services. Being a woman and having longer years in service were generally associated with higher motivation under the context of job attributes and remuneration factors in Cyprus.²⁴ This is another important area for research in view of the higher expectations of primary health care providers as gatekeepers in this country. Primary care professionals need to be motivated to contribute to the success of quality care delivery in many health initiatives and programmes.²⁵ Some of the demotivating factors for primary health care workers were multitasking and mismatching of duty and qualification, staff shortage, less pay/incentive, few career development opportunities, lack of supervision and support, personal safety, job dissatisfaction, and frustration.⁴¹⁻⁴³ There were some other demotivating factors such as salary and rewards, chance of promotion, and workplace condition and supervision that had been reported among the government doctors in Negeri Sembilan about 15 years ago.⁴⁴

There are potential biases in this survey because the responses were obtained from conference participants. The participants may be more “satisfied” at the time of conference possibly because of being “let” off or away from “stressful” job, although we expect the

scale to be able to assess their “usual” job satisfaction. The low response rate in this study may cause lack of power in statistical analyses and comparison of certain subgroups. Various small subgroups were pooled together into bigger groups and multivariate analyses were conducted to adjust for potential confounding factors. Comparisons were made between the participants in the same setting to minimise these biases.

Conclusion

FMSs were generally satisfied with their working conditions regardless of the location or place of their clinics. FMS residents had the least job satisfaction. Male primary healthcare professionals and novices in primary healthcare may need more support for motivation. Further research with more representative sample population is needed to confirm the findings of this preliminary study. More researches are needed to determine the factors causing anxiety and dissatisfaction in FMS residents to enhance their training experience. Primary healthcare and its professionals in this country needed more attention and support for their essential function in primary care.

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This study was self-funded and we declare no conflicts of interest.

References

1. Williams ES, Skinner AC. Outcomes of physician job satisfaction: a narrative review, implications, and directions for future research. *Health Care Management Review* 2003;28(2).
2. Faragher EB, Cass M, Cooper CL. The relationship between job satisfaction and health: a meta-analysis. *Occup Environ Med* 2005;62(2):105-12.
3. Arabella M. Job satisfaction in general practice implications for prescribing. *Soc Sci Med Med Psychol Med Sociol* 1980;14(6):495-9.
4. DiMatteo MR, Sherbourne CD, Hays RD, et al. Physicians' characteristics influence patients' adherence to medical treatment: results from the Medical Outcomes Study. *Health Psychol* 1993;12(2):93-102.
5. Linn LS, Brook RH, Clark VA, et al. Physician and patient satisfaction as factors related to the organization of internal medicine group practices. *Med Care* 1985;23(10):1171-8.
6. Williams ES, Konrad TR, Linzer M, et al. Physician, practice, and patient characteristics related to primary care physician physical and mental health: results from the Physician Worklife Study. *Health Serv Res* 2002;37(1):121-43.
7. Lewis JM, Barnhart FD, Howard BL, et al. Work satisfaction in the lives of physicians. *Tex Med* 1993;89(2):54-61.
8. Zhang Y, Feng X. The relationship between job satisfaction, burnout, and turnover intention among physicians from urban state-owned medical institutions in Hubei, China: a cross-sectional study. *BMC Health Serv Res* 2011;11:235.
9. Sararaks S, Jamaluddin R. Job satisfaction of doctors in Negeri Sembilan. *Med J Malaysia* 1997;52(3):257-63.
10. Buchbinder SB, Wilson M, Melick CF, et al. Estimates of costs of primary care physician turnover. *Am J Manag Care* 1999;5(11):1431-8.
11. Qian F, Lim MK. Professional satisfaction among Singapore physicians. *Health Policy* 2008;85(3):363-71.
12. Van Ham I, Verhoeven AAH, Groenier KH, et al. Job satisfaction among general practitioners: A systematic literature review. *Eur J Gen Pract* 2006;12(4):174-80.
13. Shi L, Song K, Rane S, et al. Factors associated with job satisfaction by Chinese primary care providers. *Prim Health Care Res Dev.* 2013:1-12.
14. Schattner PL, Coman GJ. The stress of metropolitan general practice. *Med J Aust* 1998;169(3):133-7.
15. Appleton K, House A, Dowell A. A survey of job satisfaction, sources of stress and psychological symptoms among general practitioners in Leeds. *Br J Gen Pract* 1998;48(428):1059-63.
16. Landon BE, Reschovsky J, Blumenthal D. Changes in career satisfaction among primary care and specialist physicians, 1997-2001. *JAMA* 2003;289(4):442-9.
17. Whalley D, Bojke C, Gravelle H, et al. GP job satisfaction in view of contract reform: a national survey. *Br J Gen Pract* 2006;56(523):87-92.
18. Cooper C. *Theories of Organizational Stress*. Oxford: Oxford University Press; 1999.
19. Cooper C. Can we live with the changing nature of work? *Journal of Managerial Psychology* 1999;14(7/8):569-72.
20. Teng CL, Aljunid SM, Cheah M, et al. Morbidity and process of care in urban Malaysian general practice: the impact of payment system. *Med J Malaysia* 2003;58(3):365-74.
21. National Healthcare Establishments & Workforce Statistics (Primary Care) 2008-2009. Kuala Lumpur: Clinical Research Centre, Ministry of Health, Malaysia; 2011.
22. Glymour MM, Saha S, Bigby J et al. Physician race and ethnicity, professional satisfaction, and work-related stress: results from the Physician Worklife Study. *J Natl Med Assoc* 2004;96(10):1283-9, 1294.
23. Linzer M, Konrad TR, Douglas J et al. Managed care, time pressure, and physician job satisfaction: results from the physician worklife study. *J Gen Intern Med* 2000;15(7):441-50.
24. Lambrou P, Kontodimopoulos N, Niakas D. Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital. *Hum Resour Health* 2010;8:26.
25. Franco LM, Bennett S, Kanfer R. Health sector reform and public sector health worker motivation: a conceptual framework. *Soc Sci Med* 2002;54(8):1255-66.
26. Warr P, Cook J, Wall T. Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of*

- Occupational Psychology 1979;11-28.
27. Chan YH. Biostatistics 201: linear regression analysis. Singapore Med J 2004;45(2):55-61.
 28. Weaver SP, Mills TL, Passmore C. Job satisfaction of family practice residents. Fam Med 2001;33(9):678-82.
 29. Randall CS, Bergus GR, Schlechte JA, et al. Factors associated with primary care residents' satisfaction with their training. Fam Med 1997;29(10):730-5.
 30. Takahashi O, Ohde S, Jacobs JL, et al. Residents' experience of scholarly activities is associated with higher satisfaction with residency training J Gen Intern Med 2009;24(6):716-20.
 31. Saini NK, Agrawal S, Bhasin SK, et al. Prevalence of stress among resident doctors working in Medical Colleges of Delhi. Indian J Public Health 2010;54(4):219-23.
 32. Linn LS, Brook RH, Clark VA et al. Physician and patient satisfaction as factors related to the Organization of Internal Medicine Group Practices. Med Care 1985;23(10):1171-8.
 33. DiTomasso RA, DeLauro JP, Carter ST, Jr. Factors influencing program selection among family practice residents. J Med Educ 1983;58(7):527-33.
 34. Simmonds AC, Robbins JM, Brinker MR, et al. Factors important to students in selecting a residency program. Acad Med 1990;65(10):640-3.
 35. Ulmer B, Harris M. Australian GPs are satisfied with their job: even more so in rural areas. Family Practice 2002;19(3):300-3.
 36. McGlone SJ, Chenoweth IG. Job demands and control as predictors of occupational satisfaction in general practice. Med J Aust 2001;175(2):88-91.
 37. Lin BY-J, Lin Y-K, Lin C-C, et al. Job autonomy, its predispositions and its relation to work outcomes in community health centers in Taiwan. Health Promotion International; 2011.
 38. Liu JA, Wang Q, Lu ZX. Job satisfaction and its modeling among township health center employees: a quantitative study in poor rural China. BMC Health Serv Res 2010;115(10).
 39. Walker KA, Pirotta M. What keeps Melbourne GPs satisfied in their jobs? Aust Fam Physician 2007;36(10):877-80.
 40. Aira M, Mäntyselkä P, Vehviläinen A, et al. Occupational isolation among general practitioners in Finland. Occup Med 2010;60(6):430-5.
 41. Manongi RN, Marchant TC, Bygbjerg IC. Improving motivation among primary health care workers in Tanzania: a health worker perspective. Hum Resour Health 2006;4:6.
 42. Malik AA, Yamamoto SS, Souares A, et al. Motivational determinants among physicians in Lahore, Pakistan. BMC Health Serv Res 2010;10:201.
 43. Nik Wan O, Mohd Shaladdin M, Wan Abdul Aziz WMA. Analysis of satisfaction amongst the government medical officer and its relation to the behavioral factors. Journal of Global Business Management. 2009;5(1).
 44. Sararaks S, Jamaluddin R. Demotivating factors among government doctors in Negeri Sembilan. Med J Malaysia 1999;54(3):310-9.