

# Work-related stress in primary health care physicians and hospital physicians in Riyadh Military Hospital

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## Abstract

**Background:** Stress levels among healthcare professionals including doctors are high compared with the general working population. General practice appears to be one of the most stressful workplaces for health service employees.

**Objective:** To examine *whether* primary health care (PHC) physicians have a higher level of work stress than hospital physicians and identify the work characteristics leading to stress among physicians.

**Material and Methods:** Cross-sectional survey of 184 general practitioners and hospital physicians at Riyadh Military Hospital in Riyadh City, Saudi Arabia. A self-administered questionnaire based on the Reeder scale to measure psychological stress level and the Health and Safety Executive's Stress Indicator Tool to explore the sources of work stress among workers was used. Data were collected over the first two weeks of May 2009. Statistical analysis used multiple linear regressions to determine predictors of work stress and work stress factors.

**Results:** Hospital physicians reported higher Reeder scores than PHC physicians (3.28 vs 2.94,  $P=0.001$ ) and specifically in the relationships domain (1.31 vs 1.16,  $P=0.004$ ). Reeder and demand domain scores decreased with the increase in age while control and role domain scores increased with the increase in age. Gender and marital status had no statistically significant effect on stress level or work stress factors. Consultants had higher control scores compared to specialists (3.28 vs 2.97,  $P=0.012$ ). Reeder and demand scores were higher among current smokers compared with non-smokers. Being a hospital physician, younger age, married, or a smoker was predictive of work stress among physicians. The Reeder Score was a positive predictor of demand and relationship domains, and a negative predictor for the other domains, except for the domain of change, where it had no influence.

**Conclusion:** Work stress is higher among hospital physicians compared with PHC physicians in Riyadh. Hospital physicians are subjected to higher workloads, conflicts, and unacceptable behavior at work. Actions to reduce work stress among hospital physicians are indicated in this workplace.

**KEY WORDS:** Work stress, health care professionals, primary health care, hospital physicians

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## Introduction

The notion of stress is defined by the UK's Health and Safety Executive (HSE) as "the adverse reaction a person has to excessive pressure or other types of demand placed upon them".<sup>[1]</sup> Burnout is a relatively new term, closely related to the word stress and defined as "a syndrome of emotional exhaustion and cynicism that occurs frequently among

individuals who do ‘people work’ of some kind”. It consists of three components: emotional exhaustion, depersonalization, and feelings of low personal accomplishment.<sup>[2]</sup> The development of the stressed state involves four stages: environmental demands, primary appraisal, secondary appraisal, stress, and illness.<sup>[3]</sup> Environmental demands refer to the demands in the working environment. Whether those demands are perceived as stressors depends on the person’s appraisal of whether they seem to be a threat (primary appraisal). If the demands are considered as a threat, then the individual can appraise whether he/she can cope with these demands successfully or not (secondary appraisal). Stress occurs when people feel they cannot cope with the demands because they do not have the right abilities, experiences, or personality. Several models have been proposed to explain the relationship between occupational stress and disease. Karasek’s Job Strain model<sup>[4]</sup> is based on the assumption that “High Strain Jobs” are perceived as high on demands and low on decision latitude thus leading to psychological distress while “Low Strain Jobs” are perceived as low on demands and high on decision latitude producing a high level of satisfaction and a low level of stress. In this model, a “Passive Job” is perceived as low on demands and low on discretion, would thus be unlikely to produce a high level of satisfaction and thus potentially lead to poor mental health. Conversely, an “Active Job” is perceived as high on demands and high on decision latitude producing high levels of satisfaction and positive mental health.<sup>[3]</sup> Although this approach has many adherents<sup>[5–7]</sup> this is not universal.<sup>[8,9]</sup> An additional component to this model, low social support, adds an extra dimension which helps explain more of the variability in the model by buffering the negative effect of low control and high demand.<sup>[10,11]</sup> An alternative approach, the Effort–Reward Imbalance model is formed on the concept of social reciprocity which is based on the benefit of mutual co-operation leading to reciprocal rewards.<sup>[12]</sup> In this model, an imbalance between perceived effort spent and rewards received at work can lead to emotional distress.

Stress levels among healthcare professionals including doctors are high compared with the general working population<sup>[13–15]</sup> largely because the work is demanding, is characterized by high degree of responsibility and because medical errors can have catastrophic effects on both the patient and the medical professional.<sup>[16]</sup> Furthermore, health professionals are exposed to both emotional and physical risk.

General practice appears to be one of the most stressful workplaces for health service employees<sup>[14]</sup> around one-third of general practitioners reporting significant psychological distress.<sup>[17–20]</sup> High levels of stress are also found in hospital-based physicians<sup>[21–24]</sup> particularly in those at senior level.<sup>[25]</sup> Individuals of type A personality are more prone to occupational stress as are those with an external locus of control<sup>[26]</sup> with external causes being workload; organizational changes, poor management, and insufficient resources to do the job; dealing with patients’ suffering; medical mistakes, malpractice litigations and complaints.<sup>[25]</sup> The major social causes of stress among physicians are isolation,<sup>[27]</sup> poor

relationships with other doctors,<sup>[27,28]</sup> and work-life balance.<sup>[28]</sup> This combination of stressors increases the risk of, for example, coronary heart disease and musculoskeletal disorders and overt mental illness such as anxiety, depression and suicidal thoughts, and various behavioral effects.<sup>[29]</sup> These effects can, in turn, result in effects back at work including absenteeism, poor time keeping, impaired work performance and productivity, and an increase in client complaints. There are few studies of the prevalence and sources of work stress among physicians in Saudi Arabia. Sadat *et al.*<sup>[30]</sup> concluded that burnout syndrome is common among orthopedic surgeons; a further study in family physicians quantified this at 26%.<sup>[31]</sup> Lack of family support, supervisor support, and recreational activities were identified as the main sources of burnout in this group.<sup>[31]</sup> Another study<sup>[32]</sup> showed insufficient technical facilities, absence of appreciation, long working hours, and short breaks as major causes of stress among hospital staff of the Ministry of Health including physicians. Riyadh Military Hospital (RMH) is located in Riyadh city the capital of Saudi Arabia and operated by the Ministry of Defense and Aviation. It consists of the main hospital campus, which provides specialist health care services and 26 primary health care (PHC) centers providing PHC services. The hospital employs 969 physicians including 786 hospital physicians and 183 PHC physicians. It was believed locally that the PHC physicians of RMH are more prone to occupational stress than hospital physicians because of higher levels of sickness absence and turnover among them compared with hospital physicians, perhaps related to the routine nature of work and the high number of patients seen daily in PHC centers. The main objective of this study is to examine *whether* PHC physicians have a higher level of work-related stress than hospital physicians and to explore the work characteristics that may lead to stress among physicians.

## Material and Methods

This study compared indices of stress in a comparative cross sectional (ex-post-facto) design between PHC physicians and hospital physicians working in RMH.

The study had 95% confidence and 80% power to detect a 27% difference in the proportion of psychological stress between PHC physicians and hospital physicians. The sample size needed to detect this difference was 77 in each arm which was increased to 92 to allow for a 20% dropout rate. The participants were selected randomly from the total staff numbers in each group using a random number table.

A self-administered questionnaire was devised based on the Reeder Stress Inventory and the UK Health and Safety Executive’s (HSE’s) Stress Indicator Tool. The Reeder Stress Inventory is a 4-item questionnaire investigating the level of psychosocial stress. It has been validated against the GHQ-12, the Hospital Anxiety and Depression Scale and the Karasek Job Strain Questionnaire.<sup>[33]</sup> The HSE Stress Indicator Tool is a validated 35-item questionnaire relating to the six primary stressors identified in the Management Standards for

Work-Related Stress developed by HSE.<sup>[34]</sup> The questionnaire comprises 39 items answered through a five-point Likert type rating scale, the first four questions representing the Reeder Scale and the other 35 questions the HSE's Stress Indicator Tool covering the following seven domains:

- The "Control" scale represents how much say the person has in the way he/she does the work (items 5, 6, 19, 23, 29, and 34).
- The "Demands" scale includes issues such as workload, work patterns and the work environment (items 7, 10, 9, 13, 20, 22, 24, and 26).
- "Role" includes whether people understand their role within the organization and whether the organization ensures that they do not have conflicting roles (items 8, 14, 15, 17, and 21).
- "Change" includes how organizational change is managed and communicated in the organization (items 30, 32, and 36).
- "Peer Support" includes the encouragement, sponsorship and resources provided by colleagues (items 11, 28, 31, and 35).
- "Managers' Support" is similar but focused on the support provided by the organization and line management and consists of five items (see items 12, 27, 33, 37, and 39).
- "Relationships" includes promoting positive working to avoid conflict and dealing with unacceptable behavior (items 9, 18, 25, and 38).

The questionnaire also included socio-demographic data: age, gender, job title namely specialist and consultant, smoking status, and marital status. "Specialist" refers to the physician who has completed clinical training in a specific area of medicine including family medicine, while "consultant" refers to the senior physician who has practiced his/her specialty for at least 4 years after he/she became a specialist.

A pilot study of 20 physicians (10 from each group) was conducted to check the understandability and clarity of questions. A question about alcohol consumption was consequently omitted because it was considered as a sensitive and potentially offensive question but otherwise no changes were needed in the questionnaire.

The survey was anonymous. Questionnaires were distributed manually to the study participants who were informed through the questionnaire about the purpose of the study and that their participation was voluntary. Data were collected over the first two weeks of May 2009, checked manually for completeness and stored confidentially.

Ethical approval was obtained from the Ethical Committee of the RMH.

## Data Management

### Scoring System

Stress items were scored 1, 2, 3, 4, and 5 for the responses never, rarely, sometimes, often, and always, respectively. For each domain, the scores of the items were summed and the total divided by the number of the items, giving a mean score

for each domain. All data were entered into a Microsoft Excel 2003 spreadsheet.

### Statistical Analysis

Data analysis was done using Epi-Info 6.04 and SPSS 14.0 statistical software packages. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. The reliability of the questionnaire was assessed by checking internal consistency with Cronbach's Alpha coefficient. Quantitative continuous data were compared using Student *t*-test in case of comparisons between two independent groups, and one-way analysis of variance test (ANOVA) for multiple group comparisons. When normal distribution of the data could not be assumed, the non-parametric Mann-Whitney or Kruskal-Wallis tests were used instead. Qualitative variables were compared using chi-square test. Pearson correlation analysis was used for assessment of the inter-relationships among scores of domains and age. To identify the independent predictors of stress, multiple stepwise backward linear regression analysis was used. Statistical significance was considered at  $P$ -value  $< 0.05$ .

## Results

In total, 88 PHC physicians (95.7%) and 85 hospital physicians (92.4%) completed the questionnaires, a total of 173 PHC and hospital physicians. The response rate was 94%.

Of the 173 respondents, 117 (67.7%) physicians were male with an overall mean age of 41.5 years (Table 1). Briefly, 111 (64.2%) of the respondents were specialists and 62 (35.8%) were consultants. The hospital group members were significantly more likely to be male, unmarried and current smokers. Regarding job stress level (Table 2), there were statistically significant differences between the PHC and hospital groups for three items of the Reeder scale, specifically: "There is a great deal of nervous strain connected to my daily activities", "My daily activities are extremely trying and stressful" and "At the end of the day I am completely exhausted".

As for the sources of job stress, the total scores of the Stress Indicator Tool domains showed a significantly higher mean score for hospital physicians only in the Relationships domain (Hospital vs PHC: 1.3 vs 1.16, respectively,  $P = 0.004$ ) (Table 3). However, when considering items within each domain, there were more specific differences, with generally higher scores in the hospital physicians group (Table 4). In the Demands domain, this group scored significantly higher for: "I have to work very intensively" and "I am pressured to work long hours" and in the Relationships domain scored higher for; "There is friction or anger between colleagues" and "I am subject to bullying at work". In the other domains only one item showed a significant difference, namely "Staff are always consulted about change at work" (Hospital vs PHC scores 3.04 vs 2.66,  $P = 0.04$ ).

**Table 1:** Socio-demographic characteristics of primary health care (PHC) and hospital physicians

Variable	Group				P-value
	PHC (n = 88)		Hospital (n = 85)		
	Number	%	Number	%	
<b>Age</b>					
<30	7	8.0	21	24.7	
30–50	60	68.2	46	54.1	
50+	21	23.9	18	21.2	
Range	24–71		25–65		
Mean ± SD	41.4 ± 9.5		39.7 ± 10.5		0.244
<b>Sex</b>					
Male	49	55.7	68	80.0	
Female	39	44.3	17	20.0	0.001
<b>Job</b>					
Specialist	62	70.5	49	57.6	
Consultant	26	29.5	36	42.4	0.079
<b>Marital status</b>					
Married	84	95.5	70	82.4	
Unmarried	4	4.5	15	17.6	0.012
<b>Smoking status</b>					
Non-smoker	73	83.0	62	72.9	
Ex-smoker	11	12.5	8	9.4	
Current smoker	4	4.5	15	17.6	0.021

**Table 2:** Reeder scale scores among primary health care (PHC) and hospital physicians (P-values from a Mann–Whitney test)

Question	Group (mean ± SD)		P-value
	PHC (n = 88)	Hospital (n = 85)	
"In general, I am usually tense or nervous"	2.61 ± 0.73	2.62 ± 0.72	0.965
"There is a great deal of nervous strain connected to my daily activities"	2.89 ± 0.88	3.21 ± 0.96	0.019
"My daily activities are extremely trying and stressful"	2.88 ± 0.87	3.48 ± 0.98	<0.001
"At the end of the day I am completely exhausted"	3.27 ± 1.04	3.68 ± 1.05	0.012
Total	2.94 ± 0.41	3.28 ± 0.49	0.001

**Table 3:** Total scores for the Stress Indicator Tool domains between primary health care (PHC) and hospital physicians

Domain	Group (mean ± SD)		P-value
	PHC (n = 88)	Hospital (n = 85)	
Demands	2.98 ± 0.55	3.14 ± 0.55	0.081
Relationships	1.16 ± 0.32	1.31 ± 0.32	0.004
Control	3.08 ± 0.76	3.09 ± 0.74	0.901
Role	2.60 ± 0.45	2.60 ± 0.47	0.912
Change	1.10 ± 0.33	1.17 ± 0.36	0.189
Peers' support	1.85 ± 0.37	1.81 ± 0.41	0.496
Managers' support	2.00 ± 0.57	2.05 ± 0.58	0.403

Reeder scores and the scores of the demands domain of the Stress Indicator Tool decreased with increasing age. Conversely, control and role domain scores increased with age (Table 5). Stress was not influenced by either gender or marital status. There was limited evidence of job title affecting stress with consultants showing a higher score in the control domain (consultants vs specialists: 3.28 vs 2.98,  $P = 0.012$ ). Current smokers scored higher in the Reeder scale and in the demands domain of the Stress Indicator Tool (Table 6). Multiple linear regression models (Table 7) revealed that the Reeder scale scores were highest among young, married, smoking hospital doctors, although the model explains only 17% of the total variation in the score. For the domains of the stress factors scale, the Reeder score was a positive predictor of the domains of demand and relationships, and a negative predictor for the other domains, except for the domain of change, where it had no influence. The model with the highest R-square value was that of demands (0.395), showing that about 40% of the variation in the score of this domain is explained by the Reeder score.

## Discussion

This study has shown that at Riyadh Military Hospital, hospital physicians were more stressed at work than PHC physicians. Hospital physicians reported more effects of high workload and had poorer relationships with their managers and colleagues, with stress decreasing with age and being seen more in current smokers. Strength of this study was the high response rates among PHC and hospital physicians (95.7% and 92.4%, respectively) which enhance the face validity of the results. A self-administered questionnaire has been used to collect data in this study. There are two advantages of using this type of questionnaire. First, it can be administered to a larger number of people with less cost. Second, it avoids the bias of the effect of the behavior of an interviewer who could directly influence the subject's responses. However, one potential limitation was the language barrier because the native language of the majority of physicians included

**Table 4:** Scores of demands and relationships domains of Stress Indicator Tool among primary health care (PHC) and hospital physicians

Question	Group (mean ± SD)		P-value
	PHC (n = 88)	Hospital (n = 85)	
<b>Demands</b>			
“Different groups at work demand things from me that are hard to combine”	2.75 ± 0.86	3.00 ± 0.91	0.084
“I have unachievable deadlines”	2.35 ± 0.97	2.59 ± 0.90	0.067
“I have to work very intensively”	3.76 ± 0.79	4.02 ± 0.85	0.029
“I have to neglect some tasks because I have too much to do”	2.53 ± 0.92	2.59 ± 1.09	0.861
“I am unable to take sufficient breaks”	3.15 ± 1.11	3.12 ± 1.06	0.896
“I am pressured to work long hours”	2.83 ± 1.19	3.19 ± 1.11	0.044
“I have to work very fast”	3.58 ± 0.88	3.58 ± 0.82	0.936
“I have unrealistic time pressures”	2.85 ± 0.84	2.91 ± 1.03	0.779
<b>Relationships</b>			
“I am subject to personal harassment in the form of unkind words or behavior”	2.14 ± 0.97	2.28 ± 1.05	0.437
“There is friction or anger between colleagues”	2.20 ± 0.83	2.55 ± 0.91	0.025
“I am subject to bullying at work”	2.18 ± 0.94	2.66 ± 0.98	0.003
“Relationships at work are strained”	2.65 ± 0.90	2.92 ± 0.94	0.076

**Table 5:** Relation between Reeder Scale and Stress Indicator Tool domains and the respondents' age (*p* values for Kruskal Wallis tests)

Domain	Age in years (mean ± SD)			P-value
	< 30 (n = 28)	30–50 (n = 106)	> 50 (n = 39)	
Reeder	3.30 ± 0.64	3.15 ± 0.65	2.83 ± 0.76	0.021
Control	2.94 ± 0.78	2.94 ± 0.69	3.58 ± 0.66	<0.001
Demands	3.16 ± 0.51	3.11 ± 0.52	2.85 ± 0.63	0.019
Role	2.47 ± 0.50	2.55 ± 0.46	2.82 ± 0.32	<0.001
Change	1.13 ± 0.29	1.10 ± 0.35	1.24 ± 0.35	0.060
Peers' support	1.85 ± 0.36	1.79 ± 0.40	1.93 ± 0.36	0.168
Relationships	1.30 ± 0.19	1.24 ± 0.35	1.16 ± 0.33	0.132
Managers' support	2.11 ± 0.53	1.95 ± 0.58	2.15 ± 0.57	0.150

in the study was not English. This can be avoided in future by using validated questionnaires appropriately translated. The major drawback of the self-administered questionnaire is the subjective response of participants to questions. More objective measures of stress such as measurement of urinary catecholamines, blood cholesterol, blood pressure, heart rate, and galvanic skin responses have been used in the past<sup>[7,35]</sup> although are not usable in studies aiming to define workforce stress in order to define appropriate interventions.

The present study findings are in contrast to other studies<sup>[15,36]</sup> in the literature reporting small or no differences

in work stress between PHC physicians and hospital physicians. The General Health Questionnaire (GHQ) has been used in these studies to assess the level of psychological stress among physicians. This could explain the discrepancy between our findings and the results of these studies. Meanwhile, there are a number of possible explanations for the difference in stress level between PHC physicians and hospital physicians. First, it could be due to the more strained relationship between hospital physicians compared with PHC physicians. Second, it could be explained by the recent organizational changes introduced in Family and Community Medicine Department which reduced the workload among PHC physicians in RMH significantly.<sup>[37]</sup> These changes include introduction of a “short booking system” and recruitment of more PHC physicians. In the short booking system, patients contact certain phone numbers to book close appointments within the coming few days if indicated, thus putting extra pressure on hospital staff as clinics become more full. Third, the difference in stress level could be due to the differences in the type of work and the work environment. Hospital physicians tend to have more on-call duties and deal with more emergency cases than PHC physicians. Unlike PHC physicians, hospital physicians are involved in ward rounds which are conducted on a daily basis to evaluate and manage their patients. Furthermore, hospital physicians deal with more severely ill patients compared with PHC physicians. Caring for these patients and dealing with their families may cause emotional drain or exhaustion; however, there is no evidence in the literature on this issue.

The mean scores of the Stress Indicator Tool domains were similar between the two groups except for those in

**Table 6:** Relationships between Reeder Scale and Stress Indicator Tool domains and smoking status (non-smokers vs ex-smokers)

Domain	Smoking status (mean $\pm$ SD)			P-value
	Non-smokers (n = 135)	Current smokers (n = 19)	Ex-smokers (n = 19)	
Reeder	3.07 $\pm$ 0.67	3.46 $\pm$ 0.64	2.99 $\pm$ 0.76	0.590
Control	3.08 $\pm$ 0.76	2.90 $\pm$ 0.66	3.27 $\pm$ 0.69	0.212
Demands	3.06 $\pm$ 0.54	3.29 $\pm$ 0.42	2.84 $\pm$ 0.68	0.055
Role	2.57 $\pm$ 0.48	2.62 $\pm$ 0.38	2.75 $\pm$ 0.32	0.219
Change	1.15 $\pm$ 0.33	1.04 $\pm$ 0.41	1.11 $\pm$ 0.39	0.452
Peers' support	1.82 $\pm$ 0.39	1.77 $\pm$ 0.39	1.99 $\pm$ 0.34	0.014
Relationships	1.23 $\pm$ 0.33	1.31 $\pm$ 0.30	1.19 $\pm$ 0.33	0.614
Managers' support	2.02 $\pm$ 0.57	2.14 $\pm$ 0.55	1.93 $\pm$ 0.63	0.564

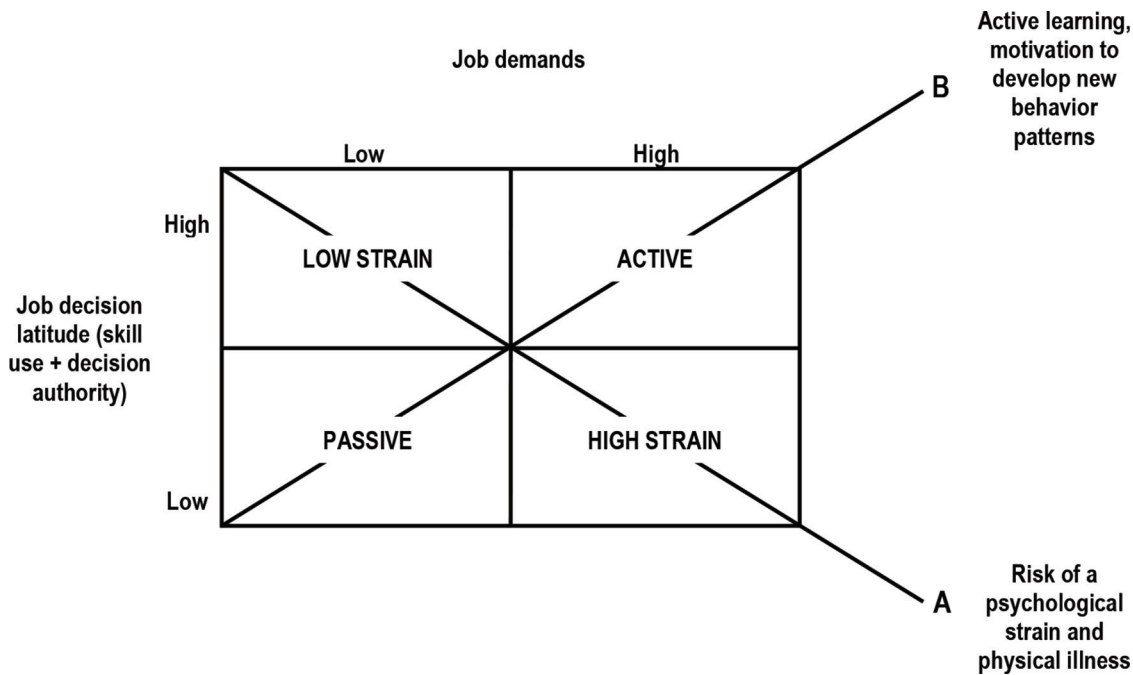
\* $P = 0.014$  vs non-smokers;  $^{\dagger}P = 0.017$  vs non-smokers; \*\* $P = 0.04$  vs non-smokers).

**Table 7:** Best fitting multiple linear regression analysis models for Reeder and stress factors domains scores

Dependent factor	Independent factors	B	R <sup>2</sup>	P-value
Reeder	Group (reference: PHC)	0.322	0.172	< 0.001
	Age	-0.020		
	Smoking (reference: non)	0.153		
	Marital status (reference: married)	-0.363		
Control	Age	0.027	0.232	< 0.001
	Reeder	-0.275		
Demands	Reeder	0.509	0.395	< 0.001
Change	Sex (reference: male)	-0.117	0.089	0.003
	Age	0.007		
	Smoking (reference: non)	-0.091		
	Marital status (reference: married)	0.157		
Peer support	Marital status (reference: married)	0.159	0.156	< 0.001
	Reeder	-0.174		
Relationships	Reeder	0.201	0.225	< 0.001
Managers' support	Reeder	-0.146	0.030	0.022

the relationships domain where hospital physicians scored higher (Hospital vs PHC: 1.31 vs 1.16,  $P = 0.004$ ). Hospital physicians appear to be subjected to more conflict and unacceptable behavior from colleagues at work including bullying and personal harassment. This appeared to be supported by greater levels of reported friction or anger between colleagues in the hospital compared with the PHC center. It could be due to the higher level of work stress among hospital physicians or the lack of policies at an organizational level promoting positive behavior and preventing or resolving unacceptable behavior. The mean scores in the change and peer support domains were the lowest amongst the positive domains again suggesting issues around workload and support as main factors in reported stress in the hospital physicians.

Older physicians tended to have lower levels of work stress than younger physicians, which is consistent with the results of previous studies.<sup>[17,27,32,38,39]</sup> Furthermore, older physicians perceived their work as less demanding and had higher levels of control over their work and a better understanding of their role and responsibilities compared with younger physicians. This is perhaps not unexpected given their greater experience and clinical competency. Consultants scored significantly higher in the control domain compared to specialists suggesting that consultants are more able to have a say about the way they do their work. This makes sense since consultant physicians generally have more experience and higher professional competency than specialists. No statistically significant differences were found in the mean



**Figure 1:** Karasek job strain model.

scores of Reeder scale and stress domains between male and female physicians and between married and unmarried.

Current smokers reported significantly higher levels of stress and work demands than non-smokers, which support earlier findings on this issue.<sup>[40–42]</sup> A possible explanation is that stressed physicians smoke more in order to cope with stress at work or that those who are less able to cope with stress are more likely to be dependent on cigarettes. There is limited evidence<sup>[43]</sup> suggesting that higher academic achievement is associated with smoking which could explain these findings. This study confirms the multi-factorial nature of work-related stress but in particular identifies that in hospital physicians in this institution being a hospital doctor, of younger age, married, or a smoker is predictive of higher levels of stress which in turn is driven by specific factors which relate to unsatisfactory working relationships. Specifically, lack of control over work patterns and load and low support in that role seem the most important factors. These findings suggest that work stress is important in this health care provider population and that interventions would likely result in improved stress levels. The UK's HSE<sup>[1]</sup> has identified approaches to reduce stress in the workplace, having communicated the findings to the employers. Primarily this should involve engagement of senior managers to commit to managing work-related stress and the production of a stress policy. In this workforce, this should incorporate ways to deal with unacceptable behavior at work and at the same time promote positive behavior to avoid conflict. The work stress attributed to organizational changes should be reduced by providing physicians with information

to enable them to understand the reasons for proposed changes, encouraging physicians to influence proposals, ensuring that physicians are aware of timetables of changes and providing them with access to relevant support during such changes. Importantly, physicians should be encouraged to support their colleagues, to make themselves aware of what support is available and how and when to access it. Lastly, stress management training should be recommended to foster awareness and recognition of stressors and to teach appropriate stress reduction skills. Whatever intervention is done, assessment of its impact would need to be undertaken after an appropriate time interval.

## Conclusion

Work stress was higher among hospital physicians compared with PHC physicians in Riyadh. Hospital physicians were subjected to higher workloads, conflicts, and unacceptable behavior at work. Actions to reduce work stress among hospital physicians were indicated in this workplace.

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