Stress, job satisfaction and work hours in medical and surgical residency programmes in private sector teaching hospitals of Karachi, Pakistan

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Abstract

Objective: To assess stress levels, job satisfaction and working hours of the residents in Medicine and Surgery and to explore a correlation among the three factors.

Methods: The questionnaire-based. cross-sectional study was conducted in 2011 at two tertiary level teaching hospitals in Karachi, Pakistan (Ziauddin University Hospital and Aga Khan University Hospital, Karachi, Pakistan). The study population comprised 176 residents, General Health Questionnaire-12 was used to assess the mental health of the residents and a standardised Job Satisfaction Survey tool was used to assess their work satisfaction.

Results: A total of 176 residents participated in the study; 115 (65%) from Medicine, and 61 (35%) from surgery. Of the total residents, 99 (56.3%) were under stress, and there was no significant difference in stress between Medicine and Surgery residents. Besides, 133 (75.6%) residents reported to be satisfied with their jobs. There was a statistically significant difference in job satisfaction between Medicine and Surgery residents ($p<0.001$). Mean number of working hours per week reported by Medicine and Surgery residents were 74.82 ± 15.95 and 92.07 ± 15.91 respectively ($p<0.001$). A positive correlation of mean working hours with both stress ($p=0.009$) and job satisfaction ($p=0.029$) was found.

Conclusions: Medicine and Surgery residents tend to differ on mean working hours and job satisfaction. The greater mean working hours of the residents could be a possible reason for increased stress and decreased job satisfaction among the residents.

Keywords: Residence, Stress, Job satisfaction. (JPMA 62: 1109; 2012).

Introduction

Residency training programmes in Medicine and Surgery can be extremely challenging. The stress experienced by the residents is mainly due to increased expectations and responsibilities faced by them as they are expected not only to be capable and efficient clinicians, but also to serve their roles as educators and researchers.[1] Long working hours among postgraduate trainees has become a topic of concern recently.[2] Increased workload is linked to higher stress levels and a reduced job performance and quality of life.[3,4] Residents face a constant struggle to be able to balance the number of working hours so that they can provide an adequate level of patient care and avoid stress.[5] In any field, job satisfaction is the key to one's personal motivation towards work. Level of job satisfaction can affect both individuals and organisations.[6-8] At the individual level, low levels of job satisfaction can be detrimental to one's quality of life and personal development. On an institutional level, a number of discontent doctors and healthcare workers can lead to an overall decreased standard of patient care in the hospital. Job satisfaction has been positively linked with increased productivity, and negatively with absenteeism and turnover in any organisation.[16,7]

A number of studies have been done to highlight the prevalence of high stress levels and reduced job satisfaction among the residents.[9-11] In a recent study, it was shown that 85% of residents were satisfied with their programme. However, 37% were concerned about their financial future, a third felt that work stress was affecting family life, and 15% even considered leaving their programme.[9] A study done in Pakistan in 2005, quoted that 55.1% of the residents had stress; 46% of which were morbid stress.[11]

Due to the negative impact that stress and job satisfaction can have on the residents, along with the paucity of data available in our country on this important issue, this study was conducted to provide a better understanding of the physical and mental well-being of residents in two major hospitals of the private healthcare sector in Karachi, Pakistan.

Subjects and Methods

The cross-sectional study involved on residents of Medicine, Surgery and their allied specialties at two tertiary

level teaching hospitals in Karachi, Pakistan. Residency programmes in both hospitals were overseen by the post-graduate medical education (PGME) committee of the respective hospital. Permission from two bodies was obtained before the start of the project. Additionally, written informed consent from each resident was also obtained. Data was collected using a self-administered standardised data-collection tool. The questionnaire consisted of four sections: the first part aimed at collecting information regarding basic socio-demographic characteristics; the second extracted information about the levels of stress by utilising the General Health Questionnaire (GHQ-12); while parts three and four focussed on gathering data pertaining to job satisfaction and working hours of the residents (hours per week). The level of stress was measured through the GHQ-12, which is a measure of current mental health. The scale asks whether the respondent has experienced a particular symptom or behaviour recently. Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual). A score of 0-1-2-3 for the four responses was given using the Likert scoring method.[12] All those who had scored 15 and above were considered to be in 'mild stress;' those who scored 20 and above were considered to have 'psychological distress;' and those with a score of 15 and below were labelled as 'not stressed.' Work satisfaction was measured using a validated Job Satisfaction Survey Tool. It consisted of 30 questions each with a 'yes' or 'no' response. Each 'yes' response was equivalent to 2 points, and there was no point for a 'no' response. A score of below 30 suggested that the respondent was not satisfied with the job. Work hours were assessed by using a list of questions that acquired information regarding the average number of hours spent per day, hours spent in the operative room, number of on-calls, and average numbers of hours spent while being on-call in the preceding one month.

The residents were approached in the wards at the end of meetings and teaching sessions for the residents, and in on-call rooms (a room where residents rest while on call). They were asked to fill the questionnaire which took approximately 10 minutes. The residents were approached a maximum of three times to fill out the questionnaire. As there was no similar study done in the past which looked at all the three parameters of work hours, job satisfaction and stress in residents, the calculation of the sample size, therefore, was difficult. Also in view of time constraint (being a student's project), convenience sampling was employed by including all residents working in the two hospitals who were approached.

Results

A total of 183 residents responded to the questionnaire that was distributed among 296. Of them, 176 residents were eventually included after removing questionnaires that had not been filled properly. Some of the questionnaires included in the study, however, had only partial demographic data (Table-1).

Table-1: Socio-demographic characteristics of Medicine and Surgery residents in two hospitals in Karachi, Pakistan.

Age (years)	n	%
24-26	22	12.5
27-29	89	50.6
30-32	53	30.1
33-35	3	1.7
36+	1	0.6
Missing	8	4.5
Total	**176**	
Gender		
Male	118	67.0
Female	58	33.0
Total	**176**	
Marital Status		
Single	104	59.1
Married	72	40.0
Total	**176**	
Number of children		
0	37	21.0
1	21	11.9
2	10	5.7
3	2	1.1
4+	2	1.1
Total	**72**	
Residency programme		
Medicine and allied	115	65.3
Surgery and allied	61	34.7
Total	**176**	
Residency year		
1	51	29.0
2	44	25.0
3	41	23.3
4	21	11.9
5	17	9.7
6	2	1.1
Total	**176**	
Living in Karachi because of:		
Work	77	43.8
Usual place of residence	99	56.2
Total	**176**	

Of the 176 participants, 118 (67%) were male. The mean age of the participants was 29±4 years. More than half of the participants (n=104; 59%) were unmarried. Of the total, 115 (65%) belonged to the Medicine and allied specialties, while 61 (35%) were associated with Surgery and allied specialties.

The parameters of stress, work satisfaction and work hours were calculated for the entire study participants and then separately in the two specialties. According to GHQ-12, 77 (43.8%) respondents had no stress, 49 (27.8%) were experiencing mild stress and 50 (28.4%) were under morbid stress. Thus, 99 (56.3%) of the residents were experiencing

Table-2: Comparison of Medicine and Surgery residents with respect to stress and job satisfaction.

		Medicine n %	Surgery n %	Odds ratio(95% CI)
Stress	Yes	63 (54.8)	36 (59.0)	0.841(0.63,2.22)
	No	52 (45.2)	25 (41.0)	
Job Satisfaction	Yes	94 (81.7)	39 (63.9)	2.525(1.24,5.11)
	No	21 (18.3)	22 (36.1)	

Table-3: Association of mean working hours with residency programme, job satisfaction and stress.

	Mean working hours per week	p-value
Residency programme		
Medicine and allied	74.82±15.95	< 0.001
Surgery and allied	92.07±15.91	
Job Satisfaction		
Yes	79.18±18.24	0.029
No	86.14±15.99	
Stress		
Yes	84.14±17.78	0.009
No	76.82±17.36	

stress. Through job satisfaction survey analysis, we found that 133 (75.6%) were satisfied with their jobs opposed to the 43 (24.4%) who were not. The average number of working hours per week for the residents had a mean 81, but the residents said the hours should not be more than 60.

Among the Medicine residents 94 (82%) were more satisfied with their jobs compared to the 39 (63.9%) Surgery residents (p=0.009). The difference in stress between the Medicine (55%) and Surgery (59%) residents was not statistically significant (p=0.590) (Table-2). A significant association was seen between job satisfaction and stress. Analysis showed that 35 (81%) of the residents who were not satisfied with their jobs were also stressed, compared to 64 (48%) of the residents who were satisfied with their jobs but were still stressed (p<0.001).

One hundred and forty five (82.9%) of the study population perceived itself to be under stress, while 94 (64.8%) of the perceived stress was consistent with stress calculated according to the GHQ-12 score, showing that a significant number of population that had perceived stress was actually under stress (p <0.001). Furthermore, 92 (91.8%) of the stressed population (according to GHQ-12 scoring) reported their stress to be related to the residency programme.

Residents belonging to Medicine were found to have 74.82 ± 15.95 mean working hours per week, whereas those in Surgery had 92.07 ± 15.91 hours (p<0.001) (Table-3). Participants who were judged to be satisfied with their job had 79.18 ± 18.24 mean working hours, whereas those who were dissatisfied had a mean of 86.14 ± 15.99 hours per week (p = 0.029). The mean working hours for residents who were found to have stress were 84.14 ± 17.78 per week, and 76.82 ± 17.36 for those who were not stressed (p = 0.009).

Discussion

The study looked widely into three important parameters of any residency programme stress, job satisfaction and work hours of residents enrolled in Medicine and Surgery. It also attempted to find a difference in each of these parameters between the two groups. To our knowledge this was the first study exploring an association among stress, job satisfaction and work hours per week of residents in Pakistan.

Overall stress reported by residents in the study was quite similar to what has been reported previously in post-graduate trainees in Karachi, Pakistan.[11] There is a paucity of research on calculated stress levels in other countries, but the perception of stress has been examined extensively. In this study the perception of stress was quite similar to the values quoted from developing countries, with more than three-fourth of the respondents perceiving themselves to be stressed.[12] However, there was a stark difference in comparison to Western data,[1,13] as only one-third of the population reported itself to be stressed. Although separate factors contributing to stress were not assessed in our study, it was found that 93% of the stressed population believed that the residency programme was a contributing factor.[14] Stress in residency programme can be due to different reasons: time pressure, financial difficulty, poor work condition, caring for own family at the same time caring for others, sleep deprivation, employment status, frequent examinations, high patient load, distant accommodation, and lack of recreational facilities within the hospital premises. Besides, one's physical and mental health problems are major factors that contribute to stress.[15]

Resident job satisfaction is a significant factor in a residency programme's ability to recruit effectively and produce competent physicians. Given that residency is so time-consuming, a resident's satisfaction with the training programme will influence the resident's quality of relationships (within and outside of the residency programme), quality of patient care, the learning atmosphere, and residency enrolment.[16-19] Two studies have shown that an important predictor of a residency's appeal to senior medical students is the satisfaction level of the current residents.[20,21] In our study, the majority of the residents looked to be satisfied with their jobs, which is consistent with a study done in India, which showed that the proportion of residents satisfied with their jobs in the teaching tertiary healthcare centre was 69.5%.[21] A study done in Israel showed that surgery residents were less satisfied with their jobs than their

counterparts in other specialities.[20] There are likely numerous factors that may play a role in this finding for instance the working conditions, time spent in the operating rooms and the number of emergencies seen in Surgery residencies might be different from those of non-surgical residencies contributing for a difference in their job satisfactions. In a recent study done in US on Surgery residents, 85.2% expressed satisfaction, whereas in our study only 64.6% of Surgery residents showed job satisfaction.[22]

Residents under stress reported more working hours on average compared to the residents who were not under stress. This finding was consistent with studies previously done in Pakistan.[11] Residents working for longer hours are more likely to be under stress. Taking the 80-hour limit suggested by the American College of Graduate Medical Education, a lot of individuals were found to be overworked and were working beyond the (ACGME) limit. Although both hospitals in our study defined 80 hours as the upper limit of the working hours, many residents mainly in Surgery and allied specialties were working more hours than the defined limits. Such data might be useful in devising future regulations regarding work time reduction as it may be a significant contributor to stress in residency programmes.

The major limitation in the study is the relatively small sample size, which may have been a possible, if not probable, factor for some of the statistically insignificant results of the study. Also, some of the demographic details were missing in a handful of questionnaires.

Conclusion

Medicine and Surgery residents tend to differ on mean working hours and job satisfaction. The greater mean working hours of the residents could be a possible reason for increased stress and decreased job satisfaction among the residents.

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