

# Comparison of Stress Levels among Female Doctors Working in Government versus Private Tertiary Care Hospital in Karachi

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## ABSTRACT

**Objective:** To compare stress levels among female doctors in government versus private hospitals in Karachi.

**Study Design:** Comparative, cross sectional study

**Place and Duration:** This study was carried out in two hospitals of Saddar Town Karachi, during the period of January 2013 to June 2013 for a period of six months.

**Material & Methods:** Hundred junior female doctors were selected on the basis of convenient sample technique. Participants filled out the Perceived Stress Scale (PSS) and answered a questionnaire asking about possible stressors. The total PSS score was calculated and level of stress calculated.

**Results:** The total PSS score was 1020 in doctors of private, and 932 of government hospitals. High scores on PSS indicate high levels of stress. Dissatisfaction with compensation and having children below the age of 18 were significant contributors of stress for respondents. The regression results indicate that working in a private hospital resulted in statistically significant higher stress levels.

**Conclusion:** Majority of the female doctors who participated in our study were dissatisfied with the working environment within the hospital. A key finding of our study is that stress levels (as measured by the PSS scale) are lower amongst respondents from the government hospital.

**Keywords:** Stress, Female doctors, Perceived Stress Scale.

## INTRODUCTION:

Stress, in a general term is defined as any kind of disturbance in physiological homeostasis<sup>1</sup>. Stress is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressure of the situation<sup>2</sup>.

Job stress is a recognized problem among

health care workers<sup>3</sup> and physicians are subjected to a high degree of occupational stress<sup>4</sup>. Medical doctors are exposed to many work-related stressors, which affect them both physically and emotionally. They must play many roles to ensure effective healthcare provision to their patients<sup>5</sup>.

The American Medical Association declaration of professional responsibility states that physicians must "advocate for the social, economic, educational, and political changes that ameliorate suffering and contribute to human well-being"<sup>6</sup>. Medical errors are associated with feelings of distress in physicians<sup>7</sup>, and decreased physician well-being increases risk of medical errors<sup>8</sup>. To prevent this cycle it is essential to ensure low stress levels among doctors.

Women in many societies are considered to be responsible for their homes and the emotional well-being of their family. Working women thus have the added responsibility of the home along

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with the work place. It has been found that female doctors have significantly lower satisfaction about workload as compared to their male counterparts<sup>9</sup>. This is because female doctors experience stressors that are unique to their gender<sup>10</sup>. Regarding gender, female medical doctors perceived a lower control of the work situation whereas male medical doctors perceived a much higher decision level<sup>11</sup>.

The general perception is that working conditions are better in private hospitals of Pakistan rather than in government run hospitals, & it has been documented that higher error rates are associated with work stressors such as inadequate supervision and increased working hours<sup>12</sup>.

Pakistan has a mixed type of health care system that comprises public and private formal/informal sectors. In addition, there is an expanding network of 42,700 registered private facilities that are involved in provision of healthcare services; most of these are clinics. The private health delivery network also consists of 550 private hospitals. Furthermore, there are doctors who simultaneously work in the public and private sectors<sup>13</sup>.

Previous research comparing government and private hospitals based in the United States of America suggests that there are differences in the way that hospitals work including the services that the different types of hospital offer<sup>14</sup>.

The aim of our study is to compare stress levels among female doctors working in government and private hospitals.

## MATERIAL & METHODS:

We conducted this study in a government and a private hospital. Both hospitals are tertiary care academic centers with postgraduate training and are located in Karachi, Pakistan. Karachi has a population of 9.3 million and is the largest city of the country. In our study a questionnaire was administered after obtaining verbal informed consent. The study was approved by the Ethical Review Committee of the Hospital that it was conducted in.

### Inclusion criteria:

- Junior female medical resident of different departments

### Exclusion Criteria:

- Male doctors.
- Senior female medical resident
- Consultants and professors

We included 100 female doctors in our study. The sample size was based on a convenient sampling approach. All participants filled out a predesigned questionnaire. 50 of these participants were currently working at a government run hospital and 50 were at a privately owned hospital. The study took place between January 2013 to June 2013. The hospitals were both placed in a medium socioeconomic setting.

We requested the participants to complete questions of the Perceived Stress Scale (PSS) and in addition they were asked 9 questions about possible stressors. The PSS is a self-administered questionnaire consisting of 10 questions. 6 of these questions are considered to be negative and 4 are considered to be positive. The Perceived Stress Scale 10 (PSS-10) is a validated and reliable instrument to measure global levels of perceived stress<sup>15</sup>.

Each item was rated on a five point Likert-type scale (0 = never to 4 = very often). Total scores are calculated after reversing positive items' scores and then summing up all scores. Items include "How often have you felt that you were unable to control the important things in your life?" and "How often have you felt nervous and 'stressed?'" The PSS has a published internal reliability of 0.84, & a test-retest reliability of 0.85 over 2 days & 0.55 over 6 weeks.

The minimum score that can be obtained on the PSS is 0 and the maximum score possible is 40. Higher scores indicate higher levels of stress and lower scores indicate lower stress levels. There is no established score on the PSS that indicates normal stress levels; since higher scores indicate higher stress levels the PSS is useful for comparing the stress levels between two groups.

In addition to the PSS-10 questions on basic demographic data such as age, gender and family, were also included based on their effect on the perception of stressful experiences.

Oral consent was obtained from the participants of the study. Participation was completely voluntary and none of the participants received any kind of compensation. Ethnicity information was not included in the data.

## RESULTS:

The age of the participants ranged from 22 to 38 years. The mean age of the doctors from the government hospital was  $24.7 \pm 1.44$  years and the mean age of the doctors from the private hospital was  $27.26 \pm 3.79$  years.

Of the 50 participants from the government hospital 6 (12%) were married, while only one of these 6 had children below the age of 18 (16.7%) and remaining five having no issue. Of the 50 participants in the private hospital 14 (28%) were

married and among them 6 (42.9%) had children below the age of 18. Of the 50 participants in the government hospital 16 (32%) felt that their environment was more conducive for men rather than women. Of the 50 participants in private hospitals, 21 (42%) felt that their environment suites more to men rather than women. All participants from government hospitals felt that their families were supportive to their career as compared to 43 of the 50 (86.5%) participants from the private hospitals.

Total PSS score for doctors in the private hospitals was 1020 whereas for doctors in government hospitals total was 932. Results of correlation analysis of factors related to burnout are summarized in Table 1.

**Table-1:** Difference between PSS Score of Government and Private Hospitals

| Variables Observed  | Private Hospital | Govt Hospital | Difference in Mean | P value | Overall Mean |
|---|------------------|---------------|--------------------|---------|--------------|
| Age   | 27.26            | 24.72         | 2.54***            | 05      | 25.99        |
| Upset because of something unexpected happening?                                | 2.18             | 2.26          | -0.08              | 0.71    | 2.22         |
| Felt unable to control the important things in life?                            | 2.14             | 1.8           | 0.34               | 0.13    | 1.97         |
| Felt nervous and stressed?  | 2.52             | 2.24          | 0.28               | 0.21    | 2.38         |
| Felt confident about your ability to handle personal problems?                  | 2.5              | 2.98          | -0.46*             | 0.03    | 2.73         |
| Felt that things were going your way?   | 2.22             | 2.32          | -0.1               | 0.81    | 2.27         |
| Found that you could not cope with all the things you had to do?                | 1.96             | 1.92          | 0.04               | 0.83    | 1.94         |
| Been able to control irritations in life?                                       | 2.3              | 2.68          | -0.38              | 0.07    | 2.49         |
| Felt on top of things?  | 2                | 2.14          | -0.14              | 0.55    | 2.07         |
| Angered because of things outside your control?                                 | 2.64             | 2.34          | 0.3                | 0.15    | 2.49         |
| Felt that difficulties were piling up so high that you could not overcome them? | 2.04             | 2.22          | -0.18              | 0.41    | 2.13         |
| PSS Score   | 20.4             | 18.64         | 1.76               | 0.12    | 19.52        |
| Satisfied with amenities in workplace?  | 0.5              | 0.22          | 0.28**             | 0.00    | 0.36         |
| Feel that adequate security is provided in your workplace?                      | 0.54             | 0.4           | 0.14               | 0.16    | 0.47         |
| Feel that your environment is more conducive for men rather than women?         | 0.42             | 0.32          | 0.1                | 0.31    | 0.37         |
| Are your supervisors encouraging and supportive?                                | 0.76             | 0.74          | 0.02               | 0.82    | 0.75         |
| Are you fairly compensated in comparison to the market rate?                    | 0.46             | 0.46          | 0                  | 1.00    | 0.46         |
| Is your family supportive of your career?                                       | 0.86             | 1             | -0.14**            | 0.01    | 0.93         |
| Are you married?  | 0.28             | 0.12          | 0.16*              | 0.05    | 0.2          |
| Do you have children below the age of 18?                                       | 0.12             | 0.02          | 0.1                | 0.05    | 0.07         |

Two factors were equally significant causes of stress for female doctors working in both government and private hospitals. Doctors who were dissatisfied with their financial compensation had significantly higher scores on the PSS as compared to doctors who were satisfied with their financial compensation. The other significant stressor for female doctors was having children below the age of 18. Those doctors who had children below the age of 18 had a higher stress score of nearly 11 points as compared to those who had no children.

The presence of adequate facilities, environment and security in the workplace were

not significant causes of stress in government hospitals as compared to private hospitals.

The coefficient for the dummy variable which asks if the respondent works in a government hospital is statistically significant and negative. This suggests the respondents who are working in a government hospital are likely to have a lower stress score by almost two points when everything else is held constant.

The results of the regression model are presented in Table 2.

**Table-2:** Regression Analyses of Variables Contributing to Perceived Stress.

| Variables   | Score                |
|---|----------------------|
| <b>Demographic</b>  |                      |
| Age   | -0.810***<br>(0.247) |
| Are you married?  | 1.804<br>(1.590)     |
| Do you have children below the age of 18?                               | 11.92***<br>(2.874)  |
| <b>Perception regarding workplace and family support</b>                |                      |
| Satisfied with amenities in workplace?                                  | -0.356<br>(1.220)    |
| Feel that adequate security is provided in your workplace?              | 0.512<br>(1.217)     |
| Feel that your environment is more conducive for men rather than women? | -1.238<br>(1.282)    |
| Are your supervisors encouraging and supportive?                        | 0.698<br>(1.280)     |
| Are you fairly compensated in comparison to the market rate?            | 0.590<br>(1.110)     |
| Is your family supportive of your career?                               | -1.987<br>(2.240)    |
| <b>Government or Private</b>  |                      |
| Government  | -2.196*<br>(1.265)   |
| Constant  | 41.87***<br>(6.978)  |
| Observations  | 100                  |
| R-squared   | 0.226                |

While the comparison in means offers us some insight into key differences between the stressor affecting respondents from government and private hospitals, we also ran an Ordinary Least Squares (OLS) Regression<sup>19</sup> to see if belonging to a government or private hospital makes a difference to the PSS score of the respondent. The regression model uses the PSS score as a dependent variable. The independent variable can be divided into three categories. The first category is demographic variables which consist of age of the respondent, their marital status and the number of children below the age of 18.

The second category consists of perceptions of the respondents regarding their workplace and family life. This category consists of questions regarding satisfaction with amenities, security in their workplace, relationship with the supervisor, compensation with respect to the market and support of family. The last category is simply with regards to whether the respondents belong to a government or private hospital.

One of the shortcomings of our study is that due to limited resources the sample was chosen primarily based on ease of access. This means that caution must be exercised when extending these results outside of the sample from this research.

#### DISCUSSION:

In this study we explored and compared stress levels in female doctors working in private and government sector. In our study, all the participants were satisfied about their family support for their career. People who thought that they were adequately compensated had less perceived stress than those who thought that they were not compensated adequately. This finding agrees with the long standing models of effort-reward relationship. If a person is not adequately rewarded in proportion to the work that she puts in, she is likely to have lower endurance, lower briskness and higher emotional reactivity<sup>16</sup>. Women with children had a higher perceived stress score than those without children.

We are unable to compare our results with this study because our sample population included junior doctors only. However another

group<sup>17</sup> found that stress in junior doctors is higher as compared to senior doctors which is consistent with the demand control model<sup>18</sup>. An initial examination of the data suggests that the greatest element of stress is the lack of confidence in being able to handle personal problems with an overall score of 2.73. Other stress contributors are being angered by things outside your control and also feeling unable to control the irritants affecting your life.

The comparison in mean suggests that respondents from private hospitals are nearly 2.5 years older than respondents from government hospitals with an overall mean of 26 years.

The data also suggests that respondents from government hospitals feel more confident about being handle their personal problems and also perceive their families as being more supportive of their career.

#### CONCLUSION:

Majority of the female physicians working at the hospitals in Karachi had poor satisfaction level with work place characteristics and high levels of job stress. Previous research suggests that some methods of improving motivation in healthcare staff include financial incentives and recognition of the work that employee's do<sup>20</sup>. Stress levels of respondents in government hospitals was lower than respondents in the private hospitals. More research is needed to examine the reasons behind high stress levels in both government and private hospitals and to come up with policy recommendations to address this issue.

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