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Short communication

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This study aimed to describe the experiences of stress and burnout and sociodemographic factors associated with dimensions of stress among medical residents at Hamad Medical Corporation, Qatar. Medical residents participating in a stress management course were asked to complete an anonymous survey. The survey included demographic questions, the Abbreviated Maslach Inventory, and 4 open-ended questions on experiences with stress. Of the 150 residents participating in the stress management course, 142 responded to the survey, listing an average of 2.2 types of stressors, with workload and workplace relationships as the most frequent. They listed an average of 3.1 coping strategies, most

**ABSTRACT** This study aimed to describe the experiences of stress and burnout and sociodemographic factors associated with dimensions of stress among medical residents at Hamad Medical Corporation, Qatar. Medical residents participating in a stress management course were asked to complete an anonymous survey. The survey included demographic questions, the Abbreviated Maslach Inventory, and 4 open-ended questions on experiences with stress. Of the 150 residents participating in the stress management course, 142 responded to the survey, listing an average of 2.2 types of stressors, with workload and workplace relationships as the most frequent. They listed an average of 3.1 coping strategies, most

frequently seeking out social support and entertainment. Responses indicated low depersonalization, high personal accomplishment, high satisfaction with medicine and high emotional exhaustion. Training to improve coping and reduce burnout is recommended.

## **Épuisement professionnel et sources de stress parmi les internes en médecine de la Hamad Medical Corporation, Qatar**

**RÉSUMÉ** La présente étude avait pour objectif de décrire les expériences de stress et d'épuisement professionnel ainsi que les facteurs socio-démographiques associés à l'existence de ce stress parmi les internes en médecine de la Hamad Medical Corporation, au Qatar. Il a été demandé à des internes en médecine participant à un cours de gestion du stress de répondre à une étude anonyme. L'étude incluait des questions d'ordre démographique, la version abrégée de l'inventaire de burnout de Maslach et 4 questions ouvertes sur les expériences de stress. Sur les 150 internes prenant part au cours sur la gestion du stress, 142 ont répondu à l'étude, énumérant une moyenne de 2,2 types de facteurs de stress, à savoir, pour les plus fréquents, la charge de travail et les relations sur le lieu de travail. Ils ont également énuméré une moyenne de 3,1 stratégies d'adaptation, consistant le plus souvent à bénéficier d'un soutien social et à avoir des d'activités divertissantes. Les réponses indiquaient une faible dépersonnalisation, un fort sentiment de réalisation personnelle, un degré de satisfaction élevé concernant le domaine de la médecine et un épuisement émotionnel important. Des formations visant à améliorer l'aptitude des internes à faire face au stress et à l'épuisement professionnel ainsi qu'à réduire ce dernier sont recommandées.

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## **Introduction**

Medical residents experience exceptional stress during their training programmes (1–3).

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Burnout, defined as a state of physical, mental and emotional exhaustion caused by constant exposure to stress, may occur due to long working hours, heavy workload, poor work environment, lack of social support, problems of relocation, and difficult patients and families (1,4–6).

Burnout interferes with residents' ability to establish effective therapeutic relationships with patients and families, and their decision-making and diagnoses (2). Burnout is also associated with insomnia, fatigue, headaches, gastrointestinal distress, irritability, decreased concentration and medical errors (7,8).

In Qatar there is a very diverse, multicultural and expatriate population of medical residents. This wide diversity may result in some unique stressors and stresses. Therefore, our aim was to investigate stress and burnout among medical residents in Qatar and to describe correlating sociodemographic factors.

## **Methods**

### **Study setting and participants**

This study was carried out in January 2015 at Hamad Medical Corporation (HMC) in Qatar. HMC, the country's not-for-profit healthcare system, provides healthcare services and manages 8 public hospitals. In 2012, HMC received institutional accreditation from the Accreditation Council of Graduate Medical Education in the United States of America. More than 90% of HMC's approximately 580 residents are expatriates.

One hundred and fifty (150) residents from 19 training programmes at HMC participated in a required stress management course. They were selected by their residency programmes to take the course primarily based upon rotation schedules. They were asked to complete an anonymous, self-completed, paper-pencil survey immediately before the course as a baseline assessment for the course.

### **Research instrument**

The mixed-methods survey first asked residents to describe their sources of stress, main coping strategies and reactions to stressors through 4 open-ended questions. The second part consisted of sociodemographic characteristics and the Abbreviated Maslach Inventory (AMI), a standardized questionnaire to assess burnout. This 12-item scale is composed of 9 items from the Maslach Burnout Inventory and a 3-item Satisfaction with Medicine scale (9,10). The 4 subscales have 3 items each: Personal Accomplishment, Emotional Exhaustion,

Depersonalization and Satisfaction with Medicine. The items are answered in terms of frequency ranging from 6 “every day” to 0 “never”. The questionnaire was in English, the primary language of education at HMC.

### **Data analyses**

Two authors created a coding schema for each question based upon open coding. Each independently coded 20% of the data. Kappa statistics from comparing their coding were acceptable (0.84 and higher). Each then independently coded the remaining data and reconciled disagreements.

The AMI was scored using published instructions (11). Independent sample t-tests and ANOVA tests examined associations between demographic characteristics and burnout scores.

### **Ethical considerations**

The HMC Institutional Review Board granted approval to conduct and publish the study. The purpose of the study was explained to the residents. They were informed that there would be no adverse consequences for those who did not want to participate. All information related to participants' identity is confidential and the survey did not ask for identifying information.

### **Results**

Of the 150 residents participating in the stress management course, 142 (94.7%) responded to the survey. [Table 1](#) displays the residents' characteristics. The respondents did not differ significantly on gender or residency year from the total population of residents at HMC (n = 580).

The average number of stressors listed per resident was 2.2. There were 3 main categories of causes of stress ([Table 2](#)). Work-related issues concerning workload and work relationships were the most common, with long working hours, high patient loads, and communication with other health care providers being among the stressors cited. For personal care and achievements, the stressors reported included sleep deprivation, lack of exercise and succeeding in exams. Stressors related to social aspects concerned family life, such as responsibilities (e.g. arranging schools for children) and the local context (e.g. obtaining visas).

The residents reported an average of 1.6 signs of stress. The most common were emotional signs (29%), and included answers such as “become angry” and “feeling low interest in doing

usual activities". The second most common were physical signs (25%), such as headache, tachycardia and fatigue. The third most common signs were behavioural (24%) including crying or shouting at others. Finally, cognitive signs (23%) included being unable to concentrate or being "mentally exhausted".

Strategies for coping with stress were coded into 14 categories, with an average of 3.1 strategies per resident ( [Table 3](#) ). The most frequently reported strategies of coping included making use of social support (30% of respondents), participating in some form of entertainment (30%), sleeping (22%) and engaging in physical activity (22%).

[Table 4](#) gives the mean scores of the 4 AMI subscales. We labelled scores over the midpoint (9) as high and those under the midpoint as low. Personal Accomplishment was highest (14.09, SD 3.14) followed by Satisfaction with Medicine (12.83, SD 3.95) and Emotional Exhaustion (10.66, SD 3.62). Depersonalization scores were fairly low (5.35, SD 3.86).

Females had significantly lower Depersonalization scores than did males (P **Discussion**

Medical residents in Qatar scored in the high range on Personal Accomplishment and Satisfaction with Medicine and in the low range on Depersonalization. However, there were high scores on Emotional Exhaustion, which is similar to studies from Saudi Arabia and Africa (1,12). The qualitative results demonstrated that residents often experienced fatigue in their interpersonal interactions with others at work. This could be because more than 90% of residents in Qatar are expatriates, contributing to their stress and burnout (13,14). Some residents do not speak Arabic and even those who do may find it hard to communicate in the Qatari colloquial dialect. Our findings may have implications for how medical education programmes address issues of stress and burnout, especially in settings with trainees of many different nationalities. The stressors reported were not specific to one country.

The most frequent stressors reported by the residents related to workload and working conditions. The primary coping strategies were social support, such as talking with family members, and entertainment. Various studies from different health care contexts have shown that social support is an important protective factor against work stress and burnout (15–17).

Sleeping and some physical activities were also reported strategies to deal with stress. Although these can be beneficial in responding to stress, too much sleep could be an avoidance strategy.

Seeking help from seniors or other health care providers was infrequent. There may be a perception among residents that expressing coping difficulties is viewed negatively.

Our finding that women scored lower on Depersonalization is consistent with a study among residents in the United States of America (18), but not with a study among Dutch residents (16). Men with children have a remarkable buffer as they scored better than men without children on Depersonalization and better than women with children on Emotional Exhaustion. It could be that men with children are more likely to have a spouse who manages home life.

Our findings also showed that first year residents scored higher on the Satisfaction with Medicine scale than did the other residents. Perhaps residents are gradually confronted with stressors that reduce their satisfaction with their career choice of medicine over time.

Our study has some limitations and strengths. Although our response rate was high, response bias is a possibility. It is possible that the burnout scores were artificially low, as those who had higher levels of burnout may have been less likely to attend the course or to complete the survey. We also could not assess whether nationality or specialty impacted burnout scores due to the anonymous nature of the survey. Additionally, we were unable to assess whether expatriate residents had higher burnout scores than local residents. Although ours was not a random sample, we demonstrated that it did not differ significantly from our larger residency population on key demographic indicators. We believe this is because the residents are essentially assigned to take the course based on rotation/schedule. However our results cannot be generalized outside of our population. The strengths of our study include it being the first to describe stress and burnout in multicultural residency programmes. Using mixed methods gave us a fuller picture of stress and burnout.

The results provide information to support medical education efforts to identify the contributing factors and consequences of burnout on patient safety and quality of care. Medical educators should provide appropriate intervention programmes to help combat stress and burnout among residents.

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