



Original Article

Assessment of burnout among urology residents in KSA: A cross-sectional study



Ahmed M. Aljuhayman, MD^{a,*}, Mohammad A. Alkhamees, MD^{a,*},
Hammam F. Alkanhal, MD^a, Meshari A. Al-Zahrani, MD^a, Sulaiman A. Almutair, MD^a
and Abdulmajeed A. Alkhamees, MD^b

^a Department of Urology, College of Medicine, Majmaah University, Al-Majmaah, KSA

^b Department of Medicine, College of Medicine and Medical Sciences, Qassim University, Al Qassim, KSA

Received 22 August 2020; revised 26 October 2020; accepted 28 October 2020; Available online 19 November 2020

المخلص

أهداف البحث: هناك نقص في أطباء المسالك البولية المقيمين في المملكة العربية السعودية، وقد يضطر المرضى إلى الانتظار حوالي ثلاثة أشهر لمقابلة أطباء المسالك البولية المؤهلين. تم الإبلاغ عن الإرهاق المرتبط بالعمل في تخصص أطباء المسالك البولية في الأدبيات الذي قد يؤثر على جودة الخدمات الصحية المقدمة للمرضى السعوديين. تهدف هذه الدراسة إلى التحقيق في الإرهاق المرتبط بالعمل بين أطباء المسالك البولية المقيمين في المملكة العربية السعودية.

طرق البحث: تم إجراء مسح مقطعي باستخدام استبانة كوبنهاجن للإرهاق، لفحص الإرهاق الشخصي والمتعلق بالعمل والمتعلق بالمرضى بين الأطباء المقيمين في المسالك البولية في المملكة العربية السعودية. تم إرسال الاستبانة إلى البريد الإلكتروني الرسمي للأطباء المقيمين المسجلين في الهيئة السعودية للتخصصات الصحية.

النتائج: وُزعت الاستبانة على ٢٤٧ طبيباً مقيماً مسجلاً، في حين أكمله ٢١٥ (٨٧.٠٤٪). فيما يتعلق بالإرهاق الشخصي، أفاد ١٢.٦٪ بأنهم "يشعرون بالتعب دائماً"، وأفاد ١٣٪ بأنهم "مرهقون جسدياً دائماً"، وأفاد ١٩.١٪ بأنهم "مرهقون عاطفياً دائماً". أيضاً أفاد حوالي ١٤٪ بأن العمل مرهق عاطفياً بدرجة عالية جداً. بينما أضاف ١٨.٦٪ أيضاً أنهم يشعرون بالإرهاق بسبب العمل بدرجة عالية جداً. وفقاً لمؤشر كوبنهاجن للإرهاق، كان متوسط الإرهاق الشخصي ٥٧.٩٢، بينما كان متوسط الإرهاق المرتبط بالعمل ٥٥.٢٦.

الاستنتاجات: يعاني الأطباء المقيمين في تخصص جراحة المسالك البولية في المملكة العربية السعودية من درجة عالية من الإرهاق. وهناك حاجة ماسة للتدخل العاجل لجعل التوازن بين العمل والحياة للمقيمين في المسالك البولية أقل إرهاقاً.

الكلمات المفتاحية: المسالك البولية؛ الأطباء المقيمين؛ المملكة العربية السعودية؛ الإرهاق؛ برنامج تدريب الزمالة.

Abstract

Objectives: There is a shortage of urology residents in the KSA, and patients may have to wait for nearly three months to seek medical consultation with qualified urologists. According to the literature, urology residents face work-related burnout, which may affect the quality of health services provided to Saudi patients. This study aims to investigate the prevalence of work-related burnout among urology residents in KSA.

Methods: A cross-sectional survey was carried out among Saudi urology residents using the Copenhagen Burnout Inventory (CBI), which includes personal, work, and patient-related burnouts. The survey was electronically sent to urology residents registered with the Saudi Commission for Health Specialties (SCFHS). Data were analysed using the SPSS program.

Results: Of the 247 selected residents, 215 (87.04%) completed the questionnaire. Concerning personal burnout, 12.6% reported 'always feeling tired', 13% 'always physically exhausted', and 19.1% reported being 'always emotionally exhausted'. In addition, approximately 14% described the work as emotionally exhausting to a very high degree, while 18.6% added that they felt burnt out because of the work to a very high degree. According to the CBI, the mean personal burnout was 57.92, while the mean work-related burnout was 55.26.

Conclusions: Urology residents in KSA suffer from a high degree of burnout, and urgent interventions are essential to make their work-life balance less exhausting.

Keywords: Burnout; KSA; Residents; Residency training; Urology

* Corresponding address: Department of Urology, College of Medicine, Majmaah University, Al-Majmaah, 11952, KSA.

E-mail: m.alkhamees@mu.edu.sa (M.A. Alkhamees)

Peer review under responsibility of Taibah University.



© 2020 The Authors.

Production and hosting by Elsevier Ltd on behalf of Taibah University. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Employees working in demanding professions may experience work-related burnout at some point in their lives.¹ Work-burnout is caused by the progressive response of the human body to serious chronic interpersonal stressors. It is generically defined as a syndrome characterised by emotional exhaustion, diminished personal accomplishment, physical and mental exhaustion, and depersonalisation.¹ While the condition is universally experienced across industries, it is a common and mounting problem for health-care professionals.² As the condition critically affects the public health industry, numerous studies have investigated the phenomenon over the last decade. Undoubtedly, work-related burnout among health-care practitioners may affect the quality of delivered health services, such as an increasing number of medical errors, and reduced patients' satisfaction levels. Additionally, it would have an impact on the number of available medical professionals in health-care settings.^{3,4} It has been recently reported that surgical residents may even quit their profession owing to the uncontrollable lifestyle and heavy workload.⁵

A urologist is a professional medical officer with varied skills related to the reproductive and urinary organs. A urology resident has to receive fundamental training in endourology and the management of urolithiasis, neurourology, urooncology, infertility and andrology, genitourinary trauma, laparoscopic and robotic surgery, reconstructive and paediatric urology. The intensity of their profession puts them at a higher risk of experiencing burnout syndrome.^{6,7} The Kingdom of Saudi Arabia (KSA) has some 70 general hospitals with urology units, and approximately 250 licensed urologists.⁷ Patients attending the outpatient units and needing an appointment with a qualified urologist have to wait for approximately three months due to the limited urologist-to-general population ratio (1–66,000). This situation may worsen as the population is projected to increase to close to 45 million by 2030.⁷

To ensure that patients in KSA are receiving high-quality health care, to minimize medical errors, and to raise patients' and physicians' satisfaction levels within the urology departments, there is a need to address work-related burnout among urology residents.^{7,8} There is also a need to inform policymakers about this critical situation, and to recruit and train more physicians in the field of urology. We therefore aimed to examine the possible work-related burnout among urology residents in KSA. To the best of our knowledge, the present study is the first to assess burnout among urology residents in the country.

Materials and Methods

The present study is a cross-sectional observational study among urology residents in KSA. Urology residents were identified using records from the Saudi Commission for

Health Specialties (SCFHS), and they were contacted through emails to take part in the study. All the participants provided their consent by choosing the 'I consent to participate' option at the beginning of the survey. The anonymity of all participants was ensured, and if any participant wanted to withdraw from the study after filling out the survey, the researchers' contact information was provided to facilitate their withdrawal. Participants were given three weeks to fill out the survey, during which time they were sent reminders regarding the study. After three weeks, the data collection session was closed.

In our study, we used the Copenhagen Burnout Inventory (CBI), a new tool of burnout assessment. It comprises three main scales for burnout measurement: (i) personal burnout, (ii) work-related burnout, and (iii) client-related burnout.⁹ The internal reliability of the CBI for all scales, calculated through Cronbach's alpha, was very high ($\alpha = 0.85–0.87$), which was similar to our study. To avoid any potential stereotyped response patterns, it is recommended that CBI items should not be delivered in questionnaires in the same order. Accordingly, we mixed the CBI items with other questions.

Simple descriptive statistics were conducted using the Statistical Package for the Social Sciences (SPSS) Version 20, and Excel software for data analysis.

Results

Basic demographics of participating urology residents

Baseline characteristics are shown in Table 1. The questionnaire was distributed among 247 registered

Table 1: Basic characteristics of study respondents (n = 215).

Variables	Mean	SD	Range
Age	30.27	3.694	(24–45)
	Sub-variables	n	%
Sex	Male	205	95.3
	Female	10	4.7
Body Mass Index	Normal	69	32.1
	Overweight	84	39.06
	Obese	61	28.37
	Missing	1	0.48
Marital status	Single	71	33
	Married	138	64.2
	Divorced	6	2.8
Raising children	Yes	105	48.8
	No	110	51.2
Complete Urology residency programme	Central region (Riyadh)	91	42.3
	Eastern region	32	14.9
	Makkah	5	2.3
	Jeddah	27	12.6
	Almadinah	8	3.7
	Almunawwarah		
	Taif	11	5.1
	Asir/Southern Region	27	12.6
	Other (please specify)	14	6.5
Training level	Junior Residents	94	43.7
	(PGY1, PGY2, PGY3)		
	Senior Residents	58	27.
	(PGY4, PGY5)		
	Graduates	63	29.3

residents, 215 (87.04%) of whom completed it. Of these, 43.7% were junior residents (PGY1, PGY2, and PGY3), 27% senior residents (PGY4 and PGY5), and 29.3% had graduated from the Urology residency programme. The respondents had a mean age of 30.27 (24–45) years with a standard deviation (SD) of 3.694. Most of the subjects were males (95.3%), 32.1% had normal BMI, 39.1% were overweight, and 28.4% were obese. With regard to marital status, 33% of the respondents were single, 64.2% were married, and 2.8% were divorced. The respondents who had completed the urology residency programme were mainly located in Riyadh (42.3%).

Personal burnout

Concerning personal burnout, 47.9% reported that they 'sometimes feel worn out', while 43.3% reported they 'often feel tired'. Also, 42.8% reported feeling 'sometimes emotionally exhausted'. Furthermore, 41.8% reported that they 'often feel physically exhausted' (Table 2).

Work-related burnout

Around 41% of the respondents felt their work is sometimes emotionally exhausting, while 44% also added that they feel frustrated because of work. Additionally, about

43% of subjects reported that they sometimes feel that every working hour is tiring for them. Moreover, only 45.9% reported that they sometimes have enough energy for family and friends during leisure time (Table 2).

Patient-related burnout

Nearly one-third of respondents reported that they found it sometimes or somewhat hard (33.0%) or frustrating (32.0%) to work with patients. On the other hand, about 45.9% of subjects reported sometimes feeling that they give more than they get back when dealing with patients (Table 2).

Overall, residents in the western region (Jeddah, Makkah, Almadinah Almunawwarah) answered more frequently with 'always' and 'often' to most of the questions, as compared to residents in other regions.

Copenhagen burnout inventory

Table 3 shows the respondents' burnout summary. It indicates that the mean personal burnout is 57.92, while the mean work-related burnout is 55.26, and the mean patient-related burnout is 37.73. The mean personal, work-related and patient-related burnout are the highest in junior residents, with a mean of 59.79, 57.29, and 39.17,

Table 2: Personal, work, and patient-related burnout among included participants.

Sentences	Always or to a very high degree (Scoring 100) %	Often or to a high degree (Scoring 75) %	Sometimes or somewhat (Scoring 50) %	Seldom or to a low degree (Scoring 25) %	Never or to a very low degree (Scoring 0) %
Personal burnout (α 0.87)					
How often do you feel tired?	12.6	43.3	42.7	0.9	0.5
How often are you physically exhausted?	13.0	41.8	40.5	4.2	0.5
How often are you emotionally exhausted?	19.1	26.0	42.8	9.8	2.3
How often do you think: 'I can't take it anymore'?	6.0	20.9	39.6	23.3	10.2
How often do you feel worn out?	9.3	29.3	47.9	12.1	1.4
How often do you feel weak and susceptible to illness?	5.1	21.4	38.2	27.9	7.4
Work-related burnout (α 0.75)					
Is your work emotionally exhausting?	14.0	29.3	40.9	11.6	4.2
Do you feel burnt out because of your work?	18.7	26.0	40.0	8.8	6.5
Does your work frustrate you?	10.5	25.9	44.0	15.8	3.8
Do you feel worn out at the end of the working day?	14.8	38.8	36.3	9.6	0.5
Are you exhausted in the morning at the thought of another day at work?	9.6	25.8	42.6	18.2	3.8
Do you feel that every working hour is tiring for you?	6.7	19.6	43.1	25.3	5.3
Do you have enough energy for family and friends during leisure time?	4.3	12.0	45.9	26.8	11.0
Patient-related burnout (α 0.8)					
Do you find it hard to work with patients?	0.5	5.7	33.0	35.4	25.4
Do you find it frustrating to work with patients?	1.9	3.8	32.1	36.4	25.8
Does it drain your energy to work with patients?	3.3	7.7	38.3	35.9	14.8
Do you feel that you give more than you get back when you work with patients?	15.3	20.1	45.9	11.0	7.7
Are you tired of working with patients?	2.4	6.7	37.8	33.0	20.1
Do you sometimes wonder how long you will be able to continue working with patients?	6.7	7.7	36.8	30.6	18.2

Table 3: Summary of respondents' burnout based on the Copenhagen Burnout Inventory (CBI).

	Mean	SD	Max	Min
The whole sample				
Personal burnout	57.92	22.42	67	47
Work-related burnout	55.26	24.4	64	43
Patient-related burnout	37.73	24.64	56	30
Junior Residents (PGY1, PGY2, PGY3)				
Personal burnout	59.79	23.59	68	0
Work-related burnout	57.29	25.69	68	38
Patient-related burnout	39.17	25.05	55	32
Senior Residents (PGY4, PGY5)				
Personal burnout	49.672	17.79	68	0
Work-related burnout	56.078	23.19	65	44
Patient-related burnout	38.01	24.48	61	26
Graduates				
Personal burnout	55.09	22.05	64	42
Work-related burnout	51.37	22.54	59	43
Patient-related burnout	35.27	23.93	53	27
Males				
Personal burnout	75.58	22.50	66	46
Work-related burnout	55.15	24.65	64	43
Patient-related burnout	37.83	24.83	56	30
Females				
Personal burnout	65	18.51	73	55
Work-related burnout	57.50	20.07	73	45
Patient-related burnout	35.83	20.30	65	25

respectively. Moreover, the mean personal burnout and the mean patient-related burnout are higher in male residents with a mean of 75.58 and 55.15, respectively, while females have higher work-related burnout with a mean of 57.5.

Discussion

This study utilised the Copenhagen Burnout Inventory (CBI) instead of the Maslach Burnout Inventory (MBI), which is the most commonly used tool to measure burnout. The MBI considers burnout as a syndrome consisting of three domains: emotional exhaustion, depersonalisation, and reduced personal accomplishment. This definition has been criticised as exhaustion alone is believed to be the core definition of burnout.¹⁰ The CBI, meanwhile, focuses primarily on exhaustion in all scales.⁹

The present study is consistent with previous studies that investigated burnout among surgical and urology residents around the world. In a cross-sectional study among surgical residents in the United States, a total of 7905 (32%) residents filled out the surveys. The analysis of their responses revealed that 40% of surgeons were burnt out, and 30% had features of depression.¹¹ In another survey study among Turkish urologists ($n = 362$), burnout syndrome, emotional exhaustion, and depersonalisation were relatively high. The authors stated that this may negatively impact the urologists' psychosocial and health status.¹² In another international study examining burnout among urology residents in the United States and Europe, the burnout prevalence varied between countries, with the lowest rate among French urologists.¹³ In this study, burnout was estimated to affect 40% of all residents, with the highest rate of burnout observed in Portuguese residents at 68%,

followed by Italy (49%), USA (37.9%), Belgium (36%), and France (26%). In another large study in the United States, 38.8% of the enrolled urologists met the burnout criteria, while 17.2% had high scores in terms of emotional exhaustion and depersonalisation.¹⁴

According to health-care reports and the Ministry of Education in Riyadh, KSA's ratio of urologists to the general population is among the lowest in the world.⁶ One urologist serves a population of 66,000, which is extremely low compared to Turkey's three urologists per 100,000 people, Europe's six urologists per 100,000, and the United States' four urologists per 100,000.⁶ Due to this limited number, Marzouk *et al.* reported that urologists in Riyadh experience heavy workloads daily, which is an important factor raising the possibility of burnout syndrome.¹⁵ In the study by Bolat *et al.*, other factors were suggested for possible burnout among urologists such as the heterogeneous distribution of urologists throughout the country, increased medical responsibilities of the specialists, and the high demand for work professionalism.¹²

Our study revealed that personal burnout and work-related burnout are relatively high among the participating urology residents. In a cross-sectional study among medical and surgical residents in Riyadh, most respondents (33.50%) stated that they work for 51–60 h per week, while 27.50% of them work for 61–70 h weekly. Also, a high level of depersonalisation, low personal achievements, and high emotional exhaustion was reported at 51%, 31.50%, and 12.50%, respectively.² We hypothesise that urology residents may be at higher risk of burnout as their training usually entails both medical and surgical skills.

According to KSA's public health-care reports, the field of urology faces numerous challenges, most of which are associated with limited manpower. However, the report by Otaibi *et al.* in 2016 declared that more training centres have been established. Additionally, the government has been working with relevant authorities to increase the number of urologists in the country.⁶

It has been reported that most health-care professionals prefer to work outside their residential homes as this may eliminate the chance of being victims of an uncontrollable lifestyle.⁵ This is consistent with the report from North *et al.*, stating that uncontrollable lifestyles may urge general surgery practitioners to leave their home countries.³ This could be attributed to different factors, including long working hours, as well as limited social and personal space.¹¹

Our results have vital policy implications. The responsible health authorities should provide prompt interventions for burnout among urology residents in KSA, especially as there is such limited manpower in this field. The training systems for urology practitioners should be altered and reorganised to make the training environment and career development less distressing. The management of burnout among urology residents should also consider work-life balance by setting strict protocols on working hours to enhance residents' satisfaction levels and quality of health care. Furthermore, tools to diagnose and manage burnout among urology residents should be available to all programme directors across the country, to avoid the negative consequences of burnout and depression caused by residency training.

While the present study is the first report investigating possible burnout among a relatively large sample of urology

residents in KSA using validated assessment tools, our study is subject to some limitations, such as the inherent biases of the design (subjectivity, recall bias, and selection bias).

Conclusion

Due to the limited number of urology residents in KSA, they are exposed to heavy workloads and personal, work-related, and patient-related burnout. Junior residents have a higher rate of burnout compared to senior residents.

Recommendations

Urgent interventions and re-evaluation of work hours for urology residents are warranted to make their work-life balance less exhausting. Further research has to be conducted on a larger sample of urology residents covering all areas of KSA, with extensive assessment and subgroup analysis.

Source of funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

The Central IRB has approved the protocol according to ICH-GCP (2019-0047E, Date: 15th April, 2019).

Authors' contributions

MAK: Conceptualised and conducted the study, wrote the manuscript, and revised the final version. HFK: Conducted the literature review and wrote the introduction section. AMJ: Provided statistical analysis and data collection. MAZ: Provided data analysis, interpretation, and collection. SAM: Prepared and designed the methodology section. AAK: Reviewed the manuscript and participated in writing the discussion section. All authors have critically reviewed and approved the final draft after revision, and are responsible for the content and similarity index of the manuscript.

Acknowledgment

The authors would like to thank the Deanship of Scientific Research at Majmaah University for supporting this work under Project Number No. R-1441-176.

References

- Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol* 2001; 52(1): 397–422.
- Alyamani A, Alyamani L, Altheneyan F, Aldhali S, Albaker K, Alshaalan A, et al. Prevalence of burnout among residents at king Abdulaziz medical city in Riyadh, Saudi Arabia. *Int J Med Res Health Sci* 2018; 7(12): 37–40.
- North AC. Physician burnout in urology. *Urol Pract* 2017; 4(2): 155–161.
- Argentero P, Dell'Olivo B, Santa Ferretti M. Staff burnout and patient satisfaction with the quality of dialysis care. *Am J Kidney Dis* 2008; 51(1): 80–92.
- Avery DM, Harrell AG, Wallace JC, Geno CE, Taylor G, Gregg JB, et al. How can we increase the number of general and rural surgeons in the United States? A study of 789 graduates from 3 campuses who matched into general surgery over 40 Years: 1974 to 2015. *Int J Innov Surg* 2018; 1: 1003.
- Al Otaibi KE. Challenge facing the urologist in Saudi Arabia in the future urology training. *Urol Ann* 2016; 8: S184–S188.
- Montgomery A, Todorova I, Baban A, Panagopoulou E. Improving quality and safety in the hospital: the link between organizational culture, burnout, and quality of care. *Br J Health Psychol* 2013; 18(3): 656–662.
- Shirom A, Nirel N, Vinokur AD. Overload, autonomy, and burnout as predictors of physicians' quality of care. *J Occup Health Psychol* 2006; 11(4): 328.
- Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: a new tool for the assessment of burnout. *Work Stress* 2005; 19(3): 192–207.
- Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S, et al. Prevalence of burnout among physicians: a systematic review. *J Am Med Assoc* 2018; 320(11): 1131–1150.
- Shanafelt TD, Balch CM, Bechamps GJ, Russell T, Dyrbye L, Satele D, et al. Burnout and career satisfaction among American surgeons. *Ann Surg* 2009; 250(3): 463–471.
- Bolat MS, Yürük E, Çınar Ö, Akdeniz E, Altunrende F, Özkuvancı Ü, et al. The prevalence of burnout syndrome among Turkish urologists: results of a nationwide survey. *Turk J Urol* 2019; 45(6): 449.
- Marchalik D, Goldman CC, Carvalho FL, Talso M, Lynch JH, Esperto F, et al. Resident burnout in USA and European urology residents: an international concern. *BJU Int* 2019; 124(2): 349–356.
- North AC, McKenna PH, Fang R, Sener A, McNeil BK, Franc-Guimond J, et al. Burnout in urology: findings from the 2016 AUA annual census. *Urol Pract* 2018; 5(6): 489–494.
- Marzouk M, Ouanes-Besbes L, Ouanes I, Hammouda Z, Dachraoui F, Abroug F. Prevalence of anxiety and depressive symptoms among medical residents in Tunisia: a cross-sectional survey. *BMJ Open* 2018; 8(7):e020655.

How to cite this article: Aljuhayman AM, Alkhamees MA, Alkanhal HF, Al-Zahrani MA, Almutair SA, Alkhamees AA. Assessment of burnout among urology residents in KSA: A cross-sectional study. *J Taibah Univ Med Sc* 2021;16(1):29–33.