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ORIGINAL RESEARCH ARTICLE

Burnout among urologists and urology trainees in Denmark

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ABSTRACT

Objective: Limited information exists on burnout among European urologists and urology trainees. This study aimed to explore prevalence of burnout and identify related workplace characteristics among practicing urologists and urology trainees in Denmark.

Material and methods: In April 2025, we conducted an anonymous nation-wide online survey of urologists and urology trainees working in a public healthcare department of Urology in Denmark. Burnout and psychosocial work environment factors were evaluated using validated assessment tools.

Results: Of the 297 participants invited, 73% ($n = 216$) completed the survey. Respondents had a mean age of 45.8 years (standard deviation [SD] ± 10.8), 52% ($n = 113$) were women, and 70% ($n = 152$) were specialists. Personal burnout was the most prevalent domain, affecting 80.1% ($n = 173$) of respondents, including 47.7% ($n = 103$) with mild, 29.6% ($n = 64$) with moderate, and 2.8% ($n = 6$) with severe burnout. Personal burnout scores varied significantly by position ($p = 0.035$) and speciality tenure ($p = 0.008$). Psychosocial work environment factors differed across groups and departments. Strongest associations with burnout were observed for 'possibilities for performing work tasks', 'emotional demands', and 'unnecessary work tasks', with a notable link between work-related burnout and 'influence at work', alongside factors related to job demands and interpersonal relations. Female respondents reported higher personal ($p = 0.003$) and work-related ($p = 0.011$) burnout scores.

Conclusions: Thirty-two percent of urologists and urology trainees in Denmark experience moderate to severe burnout, linked to psychosocial work conditions. These findings highlight the need to engage in dialogue around work-life expectations, workplace-focused prevention strategies to support career longevity, and ensure a stable workforce capable of delivering safe, high-quality patient care.

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Introduction

Burnout is a work-related syndrome with adverse implications on both physician well-being and quality of patient care [1, 2]. A comprehensive understanding of physician burnout is essential to ensure long-term sustainability of the urology workforce, particularly in the context the increasing service demands driven by an aging population [3].

In 2019, the World Health Organization (WHO) formally recognized burnout as an occupational phenomenon in the International Classification of Diseases (ICD-11) [4]. While not classified as a medical disorder, burnout is defined as a syndrome resulting from chronic, unmanaged workplace stress, and is characterized by three main dimensions: (1) feelings of energy depletion or exhaustion, (2) increased mental detachment or cynicism toward one's job, and (3) reduced professional efficacy. Notably, the condition specifically pertains to the workplace and should not be used to describe experiences outside of this context [4].

Burnout among urologists has been a subject of increasing interest in recent years. In 2015, a Mayo Clinic study presented concerning data on burnout among urologists in the United States, with 64% experiencing burnout, which makes urology one of the specialties most affected [5].

This led to an increased focus on burnout within the American Urological Association (AUA). A 2026 quality improvement issue brief published by the AUA highlights that physician burnout is a systemic problem that directly compromises the quality and safety of patient care. The brief emphasises that effective solutions should focus on improving job satisfaction and fostering greater joy in work, rather than merely addressing burnout at the level of individual urologists [6].

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Most of the existing research on burnout has been conducted in the United States, however, in recent years, an increasing number of studies have examined burnout in Europe [7].

A comparative study conducted in 2021 investigated burnout among urologists in Denmark and Michigan, the United States. While the response rate was low (50%), the study showed a significantly lower burnout rate among Danish urologists compared to urologists in Michigan [8]. However, the study did not use a burnout questionnaire validated in a Danish context, and it did not access underlying factors via a validated survey, as the thematic analysis was based on open-ended questions with varying quality.

The aim of this national cross-sectional study was to examine the prevalence of burnout and identify related risk factors among Danish urologists and urology trainees using a psychometrics questionnaire validated in a Danish labor market.

Materials and methods

The study was commissioned by the Danish Urological Society and is based on self-reported data collected via a cross-sectional national electronic anonymous survey employing validated questionnaires, conducted by MediLife, a Danish research establishment specializing in physician well-being surveys. The survey was distributed by email to all active urologists (chief consultants, consultants, senior registrars) and urology trainees (specialist registrars and registrars) across the 10 urology departments in Denmark.

Retired urologists and those working outside urology departments within the Danish public healthcare system, for example, industry, the private sector etc., were excluded.

This process ensured comprehensive coverage of the active professional cohort within Danish urology.

The urology specialist training in Denmark lasts 5 years. Urology trainees are divided into two groups: registrars, who are in the first half of their urology training, and specialist registrars, who are in the second half. Senior registrars and consultants are qualified specialists, and senior consultants have concurrent leadership responsibilities.

The study population was invited to complete an online questionnaire distributed on April 1, 2025. To ensure a high response rate, three reminders were sent to participants throughout the 30-day data collection period. The 10 urology departments in Denmark are denoted as A-J to preserve anonymity.

The survey covered demographic and occupational characteristics, alongside two validated instruments: the Copenhagen Burnout Inventory (CBI) [9] and selected scales from the Danish Psychosocial Work Environment Questionnaire (DPQ) [10] (Supplemental material).

The primary outcome was the prevalence of burnout among Danish urologists and urology trainees. Burnout prevalence was assessed using the CBI (19 questions), which conceptualizes the core components of burnout primarily as fatigue and exhaustion, considering depersonalization and reduced personal accomplishment as potential consequences. The CBI evaluates burnout across three dimensions: (1) personal burnout, reflecting a generic form of exhaustion independent of work or patient interaction; (2) work-related burnout; and (3) patient-related burnout. It is developed in Denmark and has documented strong psychometrics such as construct validity and reliability [9]. Notably, the CBI does not yield a single aggregate burnout score, but assesses burnout through these three distinct dimensions, each validated as a separate scale. The three domains collectively constitute the primary outcome of this study. The CBI was chosen over alternative instruments because its scale structure separates the core experience of exhaustion from its attributed domain, allowing the specificity of work-related burnout to be evaluated rather than presumed. The personal burnout subscale was retained as a general reference measure of general overall exhaustion.

Secondary outcomes included differences in burnout scores across demographic and occupational subgroups (including professional position, gender, tenure, and weekly working hours), departmental variation (reported descriptively) and associations between burnout and factors within the psychosocial work environment (examined using multiple linear regression). The psychosocial working conditions were measured using 12 scales selected from the DPQ. The items associated with one scale were slightly modified, and one additional self-developed item was included to assess the possibility of discussing critical incidents with colleagues or supervisors [10] (see Supplemental material).

Data were collected via MediLife Wellbeing Survey Data Collection and Analysis software 1.0 [11].

Data analysis and statistics

Demographic and work-related characteristics across the 10 urology departments were compared using chi-square (χ^2) tests for categorical variables and one-way analysis of variance (ANOVA) for continuous variables. A p-value of < 0.05 was considered statistically significant.

Variations in burnout scores (personal, work-related, and patient-related) across demographic and occupational subgroups, as well as associations between psychosocial working conditions and burnout, were examined using multiple linear regression analyses. All variables were standardized prior to analysis, and associations are reported as standardized regression coefficients (β). The regression models were adjusted for potential confounders, including sex, age, professional position, tenure, cohabitation status, and presence of children at home. To identify psychosocial risk factors associated with burnout, multiple linear regression analyses were conducted, adjusting for gender, age, professional position, tenure, cohabitation status, and presence of children at home.

Internal consistency of multi-item scales was evaluated using Cronbach's alpha, with values ≥ 0.70 considered acceptable.

Scores for the CBI and DPQ were calculated on a 0–100 scale, where higher scores indicate greater levels of the respective measured constructs.

No imputation of missing data were performed. The average item completion rate among the 216 respondents was 97%. Descriptive analyses were based on the available data for the variables concerned, while the adjusted regression analyses were based on complete cases: 212 of the 216 respondents were included in each regression model, with four respondents (2%) excluded due to missing data on adjustment variables. There were no missing data on the psychosocial scales or burnout outcomes among the remaining participants.

Associations between each psychosocial scale and each burnout dimension were examined in separate multiple linear regression models (one model per DPQ scale per burnout dimension), each adjusted for sex, age, professional position, tenure, cohabitation status, and children living at home. As the psychosocial scales were entered in separate models rather than simultaneously, multicollinearity between the psychosocial scales does not affect the estimates.

Ethics

The study complies with the General Data Protection Regulation. Participation in the survey was voluntary, and participants were guaranteed anonymity. All participants provided informed consent. In accordance with Danish legislation, approval from an institutional review board was not required. A formal written agreement on the conduct of the study, as well as a data processing agreement between MediLife and the Danish Urological Society were established. All correspondence was handled by MediLife data managers, ensuring strict confidentiality throughout the process. The authors were blinded to the identities of the respondents and departments with access limited solely to aggregated data.

Results

In this national study, 73% ($n = 216$) of all urologists and urology trainees working in a public health care department of Urology ($n = 297$) completed the questionnaire. The majority were specialists ($n = 152$), while trainees constituted 30% ($n = 64$). Mean age was 45.8 years (standard deviation [SD] ± 10.8) and 52% ($n = 113$) were female. Demographic, occupational characteristics and scores on psychosocial working conditions are listed in Table 1. Statistically significant differences were seen between the groups, and across departments, for several dimensions in the psychosocial working environment (Supplemental material Figure S1).

Table 2 presents the prevalence of burnout in the three CBI defined burnout dimensions. The highest burnout prevalence (80.1% [$n = 173$]) was observed in the personal burnout domain, distributed on either mild (47.7% [$n = 103$]), moderate (29.6% [$n = 64$]) or severe burnout (2.8% [$n = 6$]). The prevalence of work- and patient-related burnout was less pronounced: 63.9% ($n = 138$) and 45.4% ($n = 98$), respectively. The work-related burnout was distributed on mild (41.7% [$n = 90$]), moderate (19.4% [$n = 42$]) or severe burnout (2.8% [$n = 6$]), with registrars and senior registrars having the highest prevalence of moderate and severe burnout.

The burnout scores for demographic subgroups are presented in Table 3. While personal burnout scores varied significantly based on type of position ($p = 0.035$) and tenure in the speciality ($p = 0.008$), work-related burnout was influenced by weekly working hours. Women had significant higher personal ($p = 0.003$), and work-related ($p = 0.011$) burnout scores compared with men. There were no differences in scores when looking at civil status, age, home-living children, number of on-call shifts or primary work function (clinic, research or a combination).

Burnout variations across the 10 urology departments in Denmark are demonstrated in Figure 1. For all departments, except department J, the highest burnout scores were found for personal burnout, followed by work-related burnout. While only work-related burnout reached statistical significance, when comparing all the departments, department E had the lowest burnout score in all three burnout domains (patient-, work-related and personal: 16.1 [95% confidence interval, CI: 8.2–24.0], 18.9 [95% CI: 12.3–25.5] and 29.0 [95% CI: 21.0–36.9]) and department J had the highest (patient-, work-related and personal: 55.2 [95% CI: 39.4–71.0], 49.1 [95% CI: 40.4–57.9] and 54.2 [95% CI: 42.1–66.2]), with more than twice as high score in two out of three domains (patient- and work-related burnout).

Unfavorable psychosocial working conditions are, with underlying variation, significantly associated with higher levels of all three types of burnout dimensions (Table 4). While associations were generally strongest for work-related burnout, the strongest associations across all burnout dimensions were seen looking at 'possibilities for performing work tasks', 'emotional demands' and 'unnecessary work tasks'. High job demands (work pace, quantitative and emotional demands) negatively affected work-related burnout.

Discussion

The aim of this national cross-sectional survey was to map the prevalence of burnout among urologists and urology trainees employed across the 10 urology departments in Denmark, and secondary to assess the workplace characteristics associated with higher burnout. Although the topic of burnout has been studied for many years, little seems to have been done to improve the situation, underscoring the importance of this study providing data to support targeted preventive efforts against burnout among urologists. With a credible high response rate of 73%, the study is interpreted as representative of urologists working in public hospitals.

Burnout prevalence

Burnout among physicians appears to be increasing, and urologists represent no exception. In fact, urology is among the most affected specialties [5, 12].

These trends are accentuated by this study's finding a high

Table 1. Demographic and occupational characteristics.

	All (*n* = 216)	Registrar (*n* = 34)	Specialist registrar (*n* = 30)	Senior registrar (*n* = 50)	Consultant (*n* = 77)	Senior consultant (*n* = 25)	*P*
Age, years	45.8 ± 10.8	34.7 ± 4.0	36.2 ± 8.2	41.1 ± 10.4	54.9 ± 8.2	50.0 ± 7.3	**< 0.001**
Gender							
Male	103 (48%)	17 (50%)	12 (40%)	18 (36%)	46 (60%)	10 (40%)	
Female	112 (52%)	17 (50%)	18 (60%)	32 (64%)	30 (39%)	15 (60%)	
Other	1 (0.5%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)	
Occupational characteristics							
Working hours per week	40.7 ± 5.6	39.4 ± 3.6	38.9 ± 2.8)	39.0 ± 3.9	41.4 ± 6.6	45.8 ± 6.4	**< 0.001**
On-call shifts per month	3.3 ± 1.2	3.4 ± 0.9	2.8 ± 1.1	2.6 ± 1.5	2.3 ± 2.1	1.9 ± 1.8	**0.005**
Extra job	45 (20.8%)	5 (14.7%)	4 (13.3%)	8 (16%)	21 (27.3%)	7 (28%)	0.24
Working hours in extra job	4.5 ± 3.8	3.4 ± 1.3	4.2 ± 3.9	3.4 ± 4.8	4.6 ± 4.2	4.7 ± 3.3	0.58
Tenure in urology	13.9 ± 8.5	3.5 ± 2.0	6.8 ± 4.2	11.7 ± 4.3	21.5 ± 6.6	17.1 ± 6.1	**< 0.001**
Psychosocial working conditions							
Work without Boundaries	43.0 (39.8–46.2)	38.6 (31.1–46.1)	30.6 (23.9–37.4)	41.5 (36.1–46.9)	45.0 (39.1–50.9)	61.0 (53.7–68.3)	**< 0.001**
Organizational justice	67.4 (64.8–69.9)	73.3 (68.1–78.6)	75.6 (70.5–80.7)	61.4 (55.1–67.7)	64.5 (60.4–68.6)	70.0 (63.2–76.8)	**0.003**
Possibilities to talk to colleagues after critical incidents	69.8 (66.8–72.8)	71.3 (65.2–77.5)	74.2 (67.1–81.3)	67.5 (60.8–74.2)	66.6 (61.3–71.8)	77.0 (69.2–84.8)	0.195
Influence at work	63.5 (60.7–66.2)	64.7 (59.2–70.2)	61.0 (55.2–66.8)	58.6 (53.1–64.2)	62.1 (57.1–67.0)	78.5 (70.1–86.9)	**0.002**
Unnecessary work tasks	41.7 (39.2–44.2)	42.5 (36.2–48.7)	36.5 (31.0–41.9)	41.1 (36.1–46.2)	43.9 (39.7–48.1)	41.0 (32.4–49.6)	0.476
Emotional demands	29.8 (27.2–32.4)	28.9 (23.1–34.8)	27.2 (20.7–33.7)	32.8 (27.4–38.3)	25.6 (21.3–30.0)	41.0 (33.8–48.2)	**0.008**
Influence on working hours	44.4 (41.6–47.2)	42.4 (36.6–48.2)	46.4 (38.9–53.9)	41.3 (35.8–46.9)	42.4 (37.9–46.9)	57.0 (47.9–66.1)	**0.019**
Trust in colleagues	78.4 (76.3–80.4)	80.4 (76.1–84.7)	81.1 (77.2–85.0)	79.7 (74.9–84.4)	74.0 (70.4–77.6)	83.0 (77.2–88.8)	**0.036**
Quantitative demands	45.3 (42.3–48.3)	38.4 (30.7–46.1)	37.3 (30.2–44.4)	48.0 (41.8–54.2)	46.1 (41.3–50.9)	56.5 (48.5–64.5)	**0.006**
Work pace	51.1 (48.4–53.8)	52.9 (46.4–59.5)	49.2 (42.5–55.8)	56.5 (51.5–61.5)	47.2 (42.7–51.8)	52.0 (43.6–60.4)	0.129
Possibilities for performing work tasks	69.6 (67.7–71.6)	71.3 (65.6–77.1)	69.4 (63.3–75.6)	66.3 (62.3–70.3)	69.3 (66.2–72.3)	75.3 (71.1–79.6)	0.159
Social support from management	65.2 (61.9–68.5)	71.5 (64.3–78.7)	72.5 (65.9–79.1)	60.4 (53.0–67.8)	63.2 (57.5–68.9)	63.5 (54.4–72.6)	0.113
Social support from colleagues	75.1 (72.9–77.4)	81.8 (76.8–86.8)	77.9 (73.7–82.1)	78.8 (74.8–82.7)	68.0 (64.1–72.0)	77.5 (70.8–84.2)	**< 0.001**

Data are represented as number (%) or mean with ± standard deviation (SD). Each scale measuring psychosocial work environment scores on a scale from 0 to 100. A score of 100 is always the highest value for this scale (i.e. highest influence at work [=100]). *P*-values represent unadjusted bivariable comparisons across position groups. Bold p-values indicate statistical significance ($p < 0.05$).

prevalence of burnout. Personal burnout was the most prevalent domain, with 80.1% of individuals reporting mild (47.7%), moderate (29.6%), or severe (2.8%) burnout. The high burnout score for personal burnout was followed by work-related, whereas patient-related burnout was less pronounced. These findings suggest that exhaustion among urologists is primarily related to general and work-related factors supporting the notion that patient interaction itself is not the primary driver of burnout.

The prevalence of burnout observed is comparable to reports from other urological and surgical populations, although comparisons are limited by differences in instruments and definitions [7]. A study conducted by Jacobsen et al. in 2021 examined burnout among Danish and American urologists using the 22-item Maslach Burnout Inventory (MBI). They reported a burnout prevalence of 9.7%, defining burnout as responses of 'once a week', 'a few times a week', or 'every day' to either the emotional exhaustion or depersonalisation item of the MBI [8]. This may suggest that burnout among Danish urologists has increased substantially over the past 5 years. However, direct comparisons between the two studies should be made with caution, as different instruments were used to assess burnout and the inclusion criteria for respondents differed considerably. Unlike this study, which included only urologists and urology trainees employed at public hospitals, Jacobsen et al. included all members of the Danish Urological Society, encompassing urologists from the private sector, retired urologists, and junior doctors who had not yet formally commenced their specialist training in urology. Combined with a low response rate of 50%, this raises concerns as to whether

Table 2. Burnout severity.

	All (*n* = 216)	Registrar (*n* = 34)	Specialist registrar (*n* = 30)	Senior registrar (*n* = 50)	Consultant (*n* = 77)	Senior consultant (*n* = 25)	*P*
Patient-related burnout							
No symptoms	54.6 (118)	52.9 (18)	60 (18)	50 (25)	54.5 (42)	60 (15)	0.801
Light	34.3 (74)	41.2 (14)	36.7 (11)	32 (16)	33.8 (26)	28 (7)	
Moderate	9.7 (21)	5.9 (2)	3.3 (1)	16 (8)	9.1 (7)	12 (3)	
Severe	1.4 (3)	0 (0)	0 (0)	2 (1)	2.6 (2)	0 (0)	
Work-related burnout							
No symptoms	36.1 (78)	32.4 (11)	33.3 (10)	26 (13)	42.9 (33)	44 (11)	0.071
Light	41.7 (90)	38.2 (13)	53.3 (16)	36 (18)	41.6 (32)	44 (11)	
Moderate	19.4 (42)	26.5 (9)	13.3 (4)	30 (15)	15.6 (12)	8 (2)	
Severe	2.8 (6)	2.9 (1)	0 (0)	8 (4)	0 (0)	4 (1)	
Personal burnout							
No symptoms	19.9 (43)	17.6 (6)	20 (6)	12 (6)	27.3 (21)	16 (4)	0.126
Light	47.7 (103)	38.2 (13)	53.3 (16)	44 (22)	50.6 (39)	52 (13)	
Moderate	29.6 (64)	35.3 (12)	26.7 (8)	38 (19)	22.1 (17)	32 (8)	
Severe	2.8 (6)	8.8 (3)	0 (0)	6 (3)	0 (0)	0 (0)	

Data are represented as % (number). Light burnout: Few symptoms of burnout. Moderate burnout: Symptoms of burnout that should be dealt with. Severe burnout: severe symptoms of burnout that must be dealt with immediately.

their reported burnout rate is representative of urologists working within a public hospital urology department.

Significant differences in personal burnout scores were observed across position types and tenure within the speciality. Registrars and senior registrars generally reported higher burnout scores, potentially reflecting transitional career stages marked by increasing responsibility and greater role ambiguity. Similar patterns have been reported in other Danish surgical

Table 3. Burnout scores for demographic subgroups.

	Patient-related burnout	*P*	Work-related burnout	*P*	Personal burnout	*P*
Gender		0.684		**0.011**		**0.003**
Male	24.1 (20.3–28.0)		28.2 (24.3–32.1)		34.6 (31.2–38.1)	
Female	21.0 (17.6–24.4)		35.2 (31.6–38.9)		42.0 (38.7–45.3)	
Other	12.5 (12.5–12.5)		35.7 (35.7–35.7)		33.3 (33.3–33.3)	
Position type		0.786		0.065		**0.035**
Registrar	21.0 (15.9–26.0)		34.2 (27.3–41.2)		42.3 (35.3–49.2)	
Specialistregistrar	19.9 (15.0–24.7)		27.9 (21.9–33.8)		38.9 (33.1–44.7)	
Seniorregistrar	25.6 (20.0–31.1)		38.7 (32.5–45.0)		43.4 (38.4–48.4)	
Consultant	22.6 (17.8–27.4)		28.8 (24.7–33.0)		33.9 (30.1–37.7)	
Senior consultant	20.8 (12.5–29.2)		29.1 (21.0–37.2)		37.0 (29.8–44.2)	
Tenure in Urology		0.821		0.242		**0.008**
Low (≤ 6)	21.1 (17.3–25.0)		32.5 (27.0–37.9)		41.9 (36.8–47.0)	
Medium (6–20)	23.6 (20.1–27.0)		33.4 (30.0–36.9)		39.3 (36.3–42.4)	
High (> 20)	20.8 (13.2–28.5)		26.0 (19.3–32.8)		30.6 (25.1–36.0)	
Number of on–call shifts per month		0.838		0.571		0.747
Low (≤ 1)	24.3 (18.5–30.0)		28.6 (22.9–34.4)		37.1 (31.8–42.3)	
Medium (1–4)	22.0 (19.0–25.0)		33.4 (30.0–36.7)		39.5 (36.6–42.4)	
High (> 4)	20.2 (12.3–28.2)		31.0 (24.8–37.1)		35.5 (27.3–43.7)	
Working hoursper week		0.716		**0.038**		0.804
Low (≤ 37)	22.9 (19.2–26.7)		27.9 (23.8–31.9)		37.4 (33.6–41.2)	
Medium (37–43)	23.6 (19.6–27.7)		35.8 (31.5–40.2)		40.0 (36.2–43.7)	
High (> 43)	19.6 (13.4–25.7)		30.9 (25.1–36.7)		37.4 (32.0–42.9)	
Extra job		0.934		0.947		0.480
Yes	23.5 (18.4–28.6)		30.9 (25.3–36.4)		35.6 (30.5–40.8)	
No	22.2 (19.2–25.1)		32.1 (29.1–35.2)		39.2 (36.5–42.0)	
Hours in extra job		0.090		0.354		0.766
Low (≤ 2)	19.6 (11.4–27.8)		25.5 (17.8–33.2)		35.4 (28.7–42.2)	
Medium (2–5)	21.3 (14.6–28.0)		30.5 (21.7–39.3)		31.9 (22.7–41.0)	
High (> 5)	33.8 (23.0–44.5)		38.9 (25.6–52.3)		39.6 (27.8–51.3)	

The three types of burnout were scored on a scale from 0 to 100. Data are represented as mean with 95% confidence interval.
Bold p-values indicate statistical significance ($p < 0.05$).

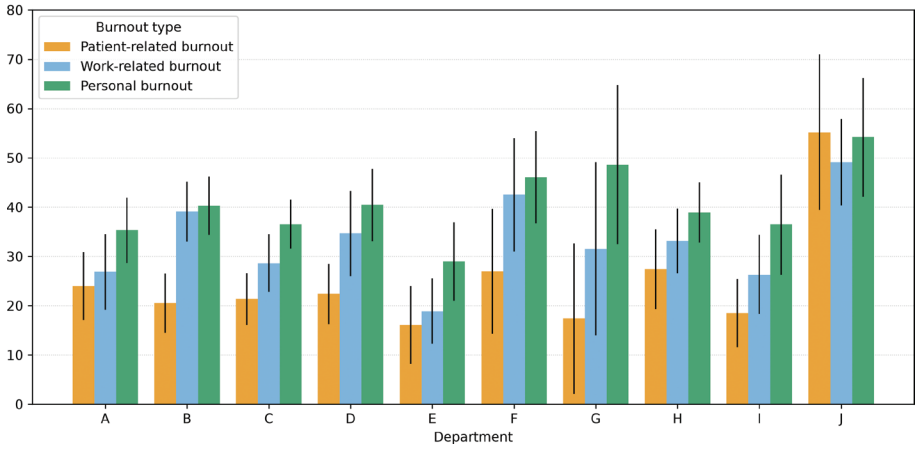


Figure 1. Burnout scores across all the urology departments in Denmark. Data are represented as mean with 95% confidence interval. Departments are enlisted A–J.

specialties, where newly appointed specialists represent a particularly vulnerable group [13]. It is also consistent with Dyrbye et al. reporting higher depersonalisation in early-career physicians and higher emotional exhaustion among mid-career physicians [14].

A high weekly workload was significantly associated with work-related burnout. This finding is consistent with a study from the United States, which reported that a working week exceeding 51 hours was likewise associated with burnout among urologists [15].

Variation in burnout between departments

Substantial variation in burnout scores was observed across departments, with more than twofold differences in some burnout domains. While only work-related burnout differed significantly between departments, this variation indicates that local organizational and cultural factors may influence burnout levels. Comparable department-level variation has previously been described in Danish vascular surgery, supporting the importance of local work environmental conditions rather than speciality-specific factors [13].

Psychosocial working conditions

Unfavorable psychosocial working conditions were consistently associated with all three burnout domains. Limited possibilities for performing work tasks, high emotional demands and unnecessary work tasks showed the strongest and most consistent associations. Influence at work and on working hours were

Table 4. Associations between psychosocial working conditions and the three types of burnout.

	Personal burnout β (SE)[§]	*P*	Work-related burnout β (SE)[§]	*P*	Patient-related burnout β (SE)[§]	*P*
Work organization						
Influence at work	−0.25 (0.06)	0.001	−0.43 (0.06)	0.001	−0.24 (0.06)	0.001
Influence on working hours	−0.22 (0.06)	0.001	−0.32 (0.06)	0.001	−0.17 (0.060)	0.009
Possibilities for performing work tasks	−0.49 (0.08)	0.001	−0.66 (0.08)	0.001	−0.43 (0.08)	0.001
Unnecessary work tasks	0.33 (0.06)	0.001	0.52 (0.06)	0.001	0.39 (0.07)	0.001
Job demands						
Work pace	0.32 (0.06)	0.001	0.44 (0.06)	0.001	0.26 (0.06)	0.001
Quantitative demands	0.31 (0.05)	0.001	0.40 (0.06)	0.001	0.12 (0.06)	0.041
Emotional demands	0.50 (0.06)	0.001	0.56 (0.06)	0.001	0.29 (0.07)	0.001
Work without boundaries	0.10 (0.05)	0.042	0.16 (0.06)	0.004	0.04 (0.06)	0.503
Interpersonal relations						
Social support from colleagues	−0.26 (0.07)	0.001	−0.37 (0.08)	0.001	−0.15 (0.08)	0.058
Trust in colleagues	−0.26 (0.08)	0.001	−0.33 (0.09)	0.001	−0.21 (0.09)	0.014
Social support from management	−0.20 (0.05)	0.001	−0.37 (0.05)	0.001	−0.11 (0.05)	0.046
Organizational justice	−0.30 (0.06)	0.001	−0.51 (0.06)	0.001	−0.27 (0.07)	0.001
Possibilities to talk to colleagues after critical incidents	−0.26 (0.05)	0.001	−0.40 (0.06)	0.001	−0.12 (0.06)	0.042

B: Standardized regression coefficient; SE: standard error.

Linear regression models were adjusted for gender, age group, position, tenure, cohabitation, and children living at home.

[§]Analyses are adjusted for gender, age group, position, tenure, cohabitation, children.

The number of observations ($n = 212$).

inversely associated with burnout, particular work-related burnout. These findings align with previous studies in other hospital-based physician populations demonstrating that lack of autonomy, inefficient work organizational and emotional strain are some of the keys drivers of burnout. This highlights the protective role of professional autonomy and flexibility [13, 16, 17]. It is encouraging to observe that interpersonal relations achieved a high score, indicating that the working environment within the urological speciality is characterised by a considerable degree of psychological safety.

Gender differences

A concerning finding of our study was the observed gender differences. Women reported significantly higher levels of both personal and work-related burnout.

As the proportion of women in the speciality is steadily increasing (unpublished data from the Danish Urological Society), these findings are worrisome, as such disparities may have important implications for workforce sustainability. The gender differences may reflect broader societal inequalities, whereby women often carry a disproportionate share of responsibilities outside the workplace and, despite working full time, continue to bear the greater domestic burden at home [18, 19].

While a recent study on burnout among urologists in UK and Ireland showed no significant gender difference [20], several studies conducted among physicians in the United States are in line with our findings [21, 22].

Data on burnout and gender associations is heterogenous, and the relationship is complex, influenced by a variety of elements [23, 24].

Strengths and limitations

The strengths of this study include its nationwide design, high response rate, and the use of validated instruments tailored to the Danish context. However, the inclusion of a self-developed question, 'Possibilities to talk to colleagues/supervisors after critical incidents', may limit the validity of the findings, as this question has not been formally validated. However, the item was developed by a senior researcher from The National Research Centre for the Working Environment, Copenhagen, and has previously been tested in a national study of burnout in vascular surgery in Denmark.

It is noteworthy that the response rate is substantially higher than that reported in other comparable studies [7]. Nevertheless, the cross-sectional design precludes causal inference, and the reliance on self-reported data may introduce reporting bias. In addition, response rate bias cannot be excluded. Some subgroup associations were close to the conventional significance threshold and should be interpreted with caution, particularly given the number of comparisons performed.

Although a 73% response rate is high for questionnaire studies, we cannot determine why some urologists did not participate. Non-responders might include individuals experiencing burnout of extreme severity, meaning our results could underestimate true burnout levels. Conversely, some may have ignored the survey because burnout felt irrelevant to them. Most likely, both groups were represented among non-respondents, and their general characteristics probably resemble those of the respondents.

Personal and work-related burnout, while conceptually distinct, are not independent constructs; prior validation work has shown these subscales to be strongly correlated. As CBI attribution is based on subjective self-report, we cannot exclude some contribution of non-occupational stressors to personal burnout scores in our sample, and causal interpretation of the work–burnout relationship should be made accordingly.

Furthermore, since the study does not include objective measures of workload, the observed association between burnout and workload reflects a subjective measure. This measure could cover several underlying aspects indicating friction with modern clinical quality systems rather than an actual increase in objective workload, for example, perceived lack of autonomy, increase in perceived 'unnecessary tasks' etc.

Perspectives

The findings highlight the importance of addressing psychosocial working conditions to mitigate burnout among urologists. Interventions aimed at engaging in dialogue around work-life balance, work organization improvement, the reduction of unnecessary tasks, and enhancing professional autonomy may be particularly effective. In addition, the observed gender differences suggest that burnout prevention strategies should consider structural and societal factors influencing work–life integration, and leaders should be encouraged to address this balance.

The observed differences in burnout scores depending on position should target focused strategies supporting physicians in transitional phases of their career.

Given the substantial overlap among the three domains (personal, patient-related, and work-related burnout), the individual domains should be examined in greater detail to enable the development of more targeted interventions.

Conclusion

Thirty-two percent of responding urologists and urology trainees in Denmark experience moderate to severe burnout. These findings are associated with psychosocial working conditions, underscoring the importance of understanding workplace-related determinants in the development of strategies aimed at preventing and reducing burnout among urologists. Effective prevention strategies are essential to ensure a stable urological workforce capable of meeting the demands of future healthcare systems and maintaining safe and high-quality patient care.

Furthermore, it is important to secure the well-being and career longevity of the individual urologist.

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Disclosure statement

The authors report no conflicts of interest.

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