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Assessment of burnout among pharmacy faculty in the Kingdom of Saudi Arabia

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Abstract

Background Burnout is a condition closely linked to deteriorating mental health and diminished work performance. There is a lack of research on burnout among pharmacy faculty in the Kingdom of Saudi Arabia. This study aims to assess the burnout rate among pharmacy faculty members in the Kingdom of Saudi Arabia and to identify predictive factors that contribute to or precipitate the onset of burnout.

Methods A cross-sectional, anonymous electronic survey was distributed to all pharmacy faculty members in the Kingdom of Saudi Arabia. The survey included the Maslach Burnout Inventory-Educators Survey, which measures three dimensions of burnout: emotional exhaustion, depersonalization, and personal accomplishment. Demographic data, Maslach Burnout Inventory-Educators scores, and potential predictors of burnout were collected and analyzed.

Results A total of 246 pharmacists participated in this study. Among them, 30.4% reported experiencing emotional exhaustion, and a similar percentage scored low on the personal accomplishment subscale. Additionally, 10.9% of the sample exhibited high scores on the depersonalization subscale. The burnout rate was found to be influenced by several factors, including citizenship, the presence of children in the household, and faculty members' academic rank.

Conclusion Pharmacy faculty members at pharmacy colleges in the Kingdom of Saudi Arabia are experiencing significant burnout, particularly in the form of emotional exhaustion and low personal accomplishment scores. Key factors contributing to burnout include citizenship, the presence of children in the household, and academic rank.

Keywords Burnout, Pharmacy, Faculty member, Saudi Arabia

Background

Burnout is a defined as a work-related syndrome characterized by high emotional exhaustion and depersonalization levels coupled with low levels of personal achievement [1]. The condition is tied to a decline in mental health and work performance which often leads to depression, suicide, or substance abuse [2]. It has also been characterized as an "occupational phenomenon" in the 11th revision of the International Classification of Diseases [3]. The heightened global concern regarding burnout underlines the importance of research around its management and prevention.

The prevalence of burnout among practicing pharmacists has been researched and evaluated in recent years [4, 5]. Dee, et al. 2023 conducted a systemic review including 11,306 pharmacists from eight countries, reporting that over half of them were experiencing some degree of burnout [4]. Alharbi et al.'s study, conducted at the National Guard Hospital in Saudi Arabia from January to December 2019, assessed the prevalence of burnout among pharamacists [5]. The study showed that 25% were suffering from burnout.

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Moreover, research on burnout among faculty at higher institutions has revealed comparatively high rates of afflicted individuals [6, 7]. El-Ibiary et al. 2017 examined faculty members at pharmacy schools in the United States (US) and found that 41.3% of participants suffered from emotional exhaustion [7]. The rate was even higher in women, assistant professors, and those lacking hobbies. Barton, et al. 1995 conducted a study evaluating stress level of pediatric faculty members at medical schools and obtained similar findings [6]. The study found that 43% of faculty members had considered leaving academia owing to burnout.

To our knowledge, there is no evidence of burnout among pharmacy faculty in the Kingdom of Saudi Arabia (KSA). Assessing burnout is important to identify contributing factors and develop strategies that can help mitigate it. Thus, we aim to assess burnout rate among faculty in the KSA using the Maslach Burnout Inventory Educators Survey (MBI-ES) and to identify predictive factors contributing to or precipitating burnout.

Methods

Research method

This study was approved by the King Saud University Institutional Review Board and sought to assess burnout rates among pharmacy faculty members working at various colleges within the KSA and to identify predictive factors contributing to or precipitating the onset of burnout. A cross-sectional, anonymous, voluntary survey was sent via email in April 2023 to the deans at pharmaceutical colleges in the KSA in the form of a link to the MBI-ES. The email contained a request for the deans to send the link to all pharmacy faculty members (including teaching assistants, lecturers, assistants, associates, and full-time professors). Included with the survey was a series of supplemental demographic questions, information on the research scope and the voluntary nature of participation, and a statement outlining that completion of the survey served as consent for participation. All deans were sent a reminder email two weeks following the first email contact. Deans whose emails were not returned as "undeliverable" were considered to have received the survey. Faculty who failed to respond to at least one question on the MBI-ES were excluded from the analysis.

Questionnaire and measures

The MBI-ES tool comprises 22 items designed to accurately indicate and measure burnout [1, 8]. Responders rate the frequency of their experiences on a 7-point Likert scale, with 1 indicating that the item "never occurs" and 7 indicating that the item "occurs on a daily basis." The MBI-ES questions were divided into three sub-scales: Emotional Exhaustion (EE, nine items),

Depersonalization (DP, five items), and Personal Accomplishment (PA, eight items) [1, 8]. The average rating for each subscale was calculated by dividing the total score by the number of completed items. For the EE and DP sub-scales, low scores were interpreted as favorable; for PA, low scores were interpreted as unfavorable. Scoring for the MBI-ES subscales were as follows: EE scores of 0–16 were considered "low," 17–26 were considered "moderate," and 27 or higher were considered "high"; DP scores of 0–6 were considered "low," 7–12 were considered "moderate," and 13 or higher were considered "high"; and PA scores of 0–30 were considered "low," 31–36 were considered "moderate," and 37 or higher were considered "high."

Population and sample

All pharmacy faculty members from 27 pharmacy colleges across the KSA were invited to participate in the study, including teaching assistants, lecturers, assistant professors, associate professors, and professors. This encompassed both government and private colleges of pharmacy from various regions of KSA, offering a comprehensive overview of the pharmacy faculty population.

Data collection

The survey was built using REDcap, a web-based application designed to facilitate data capture and collection for investigational purposes. The data was analyzed using Statistical Package for Social Sciences (SPSS), version 29. Continuous variables were presented as mean and standard deviation (SD) for normally distributed variables and as median interquartile range (IQR) for non-normally distributed variables. Categorical variables were presented as frequencies and percentages. Binary logistic regression analysis was used to identify predictors of higher burnout levels. The median burnout level of the study participants (21.0) was used to define the dummy variable for analysis. The odds ratio with a confidence interval (CI) of 95% was used to present the findings of the regression analysis. The significance level was assigned as a *p*-value less than 0.05.

Validity and reliability

To ensure validity, the research team validated the survey to confirm the language was clear, appropriate, and the questions comprehensive. A pilot test was conducted with a convenience sample of 10 pharmacy faculty members, who were not part of the final respondent group. A structured feedback form was used to gather their comments on the survey. Based on their feedback, the survey was revised to improve clarity, appropriateness, and completeness.

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Results

Participants' demographic and practice characteristics

A total of 246 pharmacists responded to the survey. The distribution of ages was as follows: 43.4% of faculty in the 30–39-year age range, 37.7% in the 40–49-year age group, and 11.9% over the age of 50 years. Over half of the participants were men (59.8%) and Saudis (57.3%). The vast majority of the study participants (86.2%) were married. Out of the married faculty, 81.3% reported having children. The vast majority of the study participants (85.8%) reported that they have worked in private institutions for over 10 years (78.0%). Over half of the study participants (53.7%) reported that their monthly income category was 20,000 SAR and above. The vast majority of the study participants (89.0%) reported having didactic teaching responsibilities. Only 8.5% of them reported that they have a mentor, of whom 66.7% reported that their mentor is within their institution. The majority of those who reported having a mentor mentioned that their relationship with them is formal (76.2%). Over half of the study participants (58.5%) reported that they practice exercises. Further details on participants' demographic and practice characteristics are presented in Table 1.

Pharmacists' burnout profile

Participants' mean scores (± standard deviation) on the MBI-ES and domain scores for EE, DP, and PA are displayed in Table 2. In total, 30.4% of faculty had scores classified as "high" for EE, whereas only approximately 10.9% of faculty exhibited "high" scores on the DP subscale. Further, approximately 30.4% exhibited "low" scores on the PA subscale.

Predictors of high burnout

Table 3 below presents the findings of the binary logistic regression analysis. Binary logistic regression analysis identified that assistant professors and professors were 80.0% less likely to experience burnout compared with others (odds ratio: 0.2 (95% CI: 0.1–0.8; $p = 0.012$ and $p = 0.019$, respectively).

Table 4 presents the median burnout score stratified by participants' characteristics. Regarding nationality, non-Saudi faculty members exhibited a notably lower median score for EE compared with Saudi faculty members (14.0 vs. 19.0, $p = 0.087$), as well as a significantly lower median score for PA (35.0 vs. 38.0, $p = 0.034$). Additionally, individuals with children exhibited a notably higher median score for EE (28.5 vs. 16.0, $p = 0.040$) and a higher median score for DP (3.5 vs. 2.0, $p = 0.031$) than those without children. Furthermore, there were notable variations in EE scores based on academic rank. Teaching assistants exhibited a higher median score of EE compared with assistant professors (23.5 vs. 15.0, $p = 0.098$). Additionally, teaching assistants exhibited a higher median DP

score compared with lecturers (3.0 vs. 2.0, $p = 0.024$). Finally, there were notable variations based on the type of relationship with a mentor. Individuals with a formal relationship exhibited a lower median DP score (1.5) than those with an informal relationship (7.0), with a p-value of 0.053. The results indicate that burnout levels among pharmacy faculty members may be influenced by factors such as nationality, parental status, academic position, and mentorship style.

Discussion

The primary aim of this study was to assess the burnout rate among pharmacy faculty members in the KSA. The secondary aim was to identify predictive factors contributing to or precipitating the onset of burnout. To our knowledge, this is the first study of its kind to assess the burnout rate among pharmacy faculty in the KSA. The demographics of practicing pharmacy faculty members surveyed indicated that the majority are married with children. Of this subset, 30.4% reported suffering from EE. Self-described factors influencing this characterization were one's Saudi citizenship, academic rank as a teaching assistant, and the presence of children in the household.

In one of the first recorded studies conducted on pharmacy faculty burnout, Jackson et al. identified that 16.4% of faculty had high EE scores, 16.8% had high DP scores, and 35.8% had low PA scores [9]. Similarly, El-Ibiary et al. examined burnout among US pharmacy practice faculty members, and found that, of the 758 participants, 41.3% reported high EE scores, 10.4% reported high DP scores, and 23.9% reported low PA scores [7]. In our study, the rate of burnout lies in between those of the previous two studies for EE scores (30.4%) and PA scores (30.4%). The reported DP scores are comparable to those found by El-Ibiary et al. (10.9%). Additionally, the mean EE and DP scores are lower than those reported in El-Ibiary et al.'s study (19.68 vs. 24.3 for EE, 4.29 vs. 6.3 for DP) but the PA scores are comparable to those reported in El-Ibiary et al.'s study (34.78 vs. 35.3). The normative data from MBI developers indicated mean EE, DP, and PA scores among teachers to be 21.3, 11, and 33.5, respectively [8]. Overall, our study found lower EE and DB scores, and higher PA scores compared with the normative MBI group.

These differences may be due to the subsets of faculty members surveyed: In our study, all pharmacy faculty members were included, whereas in El-Ibiary et al.'s study, a smaller subset of pharmacy faculty was included [7]. For scale, pharmacy practice accounted for 77.6% of their represented sample versus 20% of our sample. Pharmacy practice faculty are typically heavily involved in clinical activities, which may contribute to increased EE levels and burnout.

Table 1 Participants' demographic and practice characteristics

Variable	Frequency	Percentage
Gender		
Male	147	59.8%
Female	99	40.2%
Mean age (standard deviation) years	39.6 (11.1)	
Nationality		
Saudi	141	57.3%
Non-Saudi	105	42.7%
Marital status		
Single	28	11.4%
Married	212	86.2%
Divorced	6	2.4%
Do you have children		
Yes	200	81.3%
The median number of children (interquartile range)	3.0 (2.0–4.0)	
Academic rank		
Teaching assistant	18	7.3%
Lecturer	40	16.3%
Assistant professor	103	41.9%
Associate professor	56	22.8%
Professor	29	11.8%
Do you have administrative title		
Yes	113	45.9%
Type of institution		
Private institution	211	85.8%
Governmental institution	35	14.2%
Length of time pharmacy college established		
Less than five years	4	1.7%
5–10 years	50	20.3%
More than 10 years	192	78.0%
Mean number of working years in current institution (standard deviation)	9.1 (5.1)	
Monthly salary		
Less than 20,000 SAR	114	46.3%
20,000 SAR and above	132	53.7%
Mean number of years post-pharmacy schoolwork experience (standard deviation)	14.8 (8.0)	
Mean number of hours per week of work		
20–40 h	106	43.1%
41–50 h	114	46.3%
More than 51 h	26	10.6%
Do you practice clinically		
Yes	49	19.9%
If yes, **the mean number of hours/week devote to clinical practice** (hour/week)	1.7 (0.7)	
Do you have a didactic teaching responsibilities		
Yes	219	89.0%
Do you have a mentor		
Yes	21	8.5%
If yes, what is your mentor working location (*n* = 21)		
Within institution	14	66.7%
Outside institution	7	33.3%
If yes, what is the type of your relationship with your mentor (*n* = 21)		
Formal	16	76.2%
Informal	5	23.8%
Do you do exercise		
Yes	144	58.5%

Table 1 (continued)

Variable	Frequency	Percentage
If yes, what is the number of hours per week do you do exercise ($n = 144$)		
One hour	27	18.8%
2–3 h	54	37.5%
4–5 h	35	24.3%
6–7 h	15	10.4%
More than seven hours	13	9.0%
Do you have a regular hobby outside of work		
Yes	126	51.2%
Do you have a primary care provider		
Yes	87	35.4%
If yes, when was your last physical check ($n = 87$)		
Within the last month	17	19.5%
2–6 months	35	40.2%
7–12 months	9	10.3%
More than one year	12	13.8%
More than two years	6	6.9%
I don't remember	8	9.2%

Table 2 The respondent's overall MBI scores and domain scores

Level and Scale Category	Mean ± SD	Range (Min-Max)	Median (IQR)	Number of Respondents % ($n = 246$)
Emotional Exhaustion	19.68 ± 12.68	0–52	18 (9–29)	
Low				115 (46.9)
Moderate				56 (22.9)
High				75 (30.4)
Depersonalization	4.29 ± 5.13	0–22	2 (0–6)	
Low				186 (75.9)
Moderate				33 (13.5)
High				27 (10.9)
Personal accomplishment	34.78 ± 9.78	0–48	37 (29–42)	
Low				75 (30.4)
Moderate				40 (16.3)
High				131 (53.5)

Burnout has been extensively studied among healthcare providers in the KSA [10–12]. A national, cross-sectional survey conducted from April to November 2022 found that out of 1,174 healthcare providers, 77% reported high levels of burnout, with 58% experiencing EE, 72% experiencing DP, and 66% experiencing low PA levels [11]. Moreover, burnout was associated with a higher intention to quit one's job, low resilience, and low perceived supervisory support.

Notably, comparing these numbers to the standard demographic norms on the MBI scale [8], our study did not find a significant association between burnout and gender. However, EE scores were comparably higher for female pharmacy faculty members than for their male counterparts. This aligns with previously published data and is likely related to the persistent role conflicts affecting working mothers [13, 14].

Regarding citizenship, we found that the median EE (14.0 vs. 19.0, $p = 0.087$) and PA (35.0 vs. 38.0 $p = 0.034$)

scores for non-Saudi faculty members was lower than that of their Saudi counterparts. Burnout was also related to nationality for a different healthcare sector: Qedair et al. found that 61.7% of Saudi nurses exhibited significantly high EE and DP scores compared with nurses of other nationalities [10]. By contrast, Al-omari et al. conducted a cross-sectional survey to evaluate burnout among 892 healthcare providers and reported that non-Saudi healthcare providers experienced higher levels of EE than their Saudi counterparts [15]. This discrepancy highlights the need for further research to understand the underlying factors contributing to varying results regarding nationality.

In our study, individuals with children exhibited significantly higher median EE and DP scores compared with those without children (28.5 vs. 16.0, $p = 0.040$ for EE; 3.5 vs. 2.0, $p = 0.031$ for DP). This finding is consistent with El-Ibiary et al.'s findings that faculty members with young children (1–12 years) experienced higher levels of

Table 3 Predictors of high burnout

Variable	Odds ratio of having higher level of burnout (95% confidence interval)	P-value
Gender		
Male (Reference category)	1.00	
Female	1.6 (0.9–2.6)	0.082
Mean age category		
Less than 39.6 years (Reference category)	1.00	
39.6 years and older	0.7 (0.4–1.2)	0.209
Nationality		
Saudi (Reference category)	1.00	
Non-Saudi	0.6 (0.4-1.0)	0.059
Marital status		
Single (Reference category)	1.00	
Married	0.6 (0.3–1.4)	0.269
Divorced	0.6 (0.1–3.8)	0.630
Widowed	-	
Do you have children		
No (Reference category)	1.00	
Yes	1.7 (0.6–4.5)	0.309
The median number of children category		
Less than three children (Reference category)	1.00	
Three children and more	0.9 (0.5–1.4)	0.546
Academic rank		
Teaching assistant (Reference category)	1.00	
Lecturer	0.3 (0.1-1.0)	0.054
Assistant professor	0.2 (0.1–0.7)	0.012*
Associate professor	0.4 (0.1–1.5)	0.194
Professor	0.2 (0.1–0.8)	0.019*
Do you have administrative title		
No (Reference category)	1.00	
Yes	1.2 (0.7–1.9)	0.536
Type of institution		
Private institution (Reference category)	1.00	
Governmental institution	0.7 (0.4–1.5)	0.420
Length of time pharmacy college established		
Less than five years (Reference category)	1.00	
5–10 years	1.6 (0.1–18.5)	0.719
More than 10 years	2.3 (0.2–25.4)	0.507
Mean number of working years in current institution category		
Less than 9.1 years (Reference category)	1.00	
9.1 years and more	1.3 (0.8–2.2)	0.298
Monthly salary		
Less than 20,000 SAR (Reference category)	1.00	
20,000 SAR and above	1.1 (0.7–1.8)	0.672
Mean number of years post-pharmacy schoolwork experience category		
Less than 14.8 years (Reference category)	1.00	
14.8 years and more	1.2 (0.7-2.0)	0.435
Mean number of hours per week of work		
20–40 h (Reference category)	1.00	
41–50 h	0.9 (0.5–1.6)	0.780
More than 51 h	0.9 (0.4–2.2)	0.863
Do you practice clinically		
No (Reference category)	1.00	
Yes	0.9 (0.5–1.7)	0.725
Do you have a didactic teaching responsibilities		

Table 3 (continued)

Variable	Odds ratio of having higher level of burnout (95% confidence interval)	*P*-value
No (Reference category)	1.00	
Yes	0.6 (0.3–1.3)	0.180
Do you have a mentor		
No (Reference category)	1.00	
Yes	1.2 (0.5–2.8)	0.745
If yes, what is the type of your relationship with your mentor		
Formal (Reference category)	1.00	
Informal	6.7 (0.6–74.5)	0.123
Do you do exercise		
No (Reference category)	1.00	
Yes	1.2 (0.7–2.1)	0.412
If yes, what is the number of hours per week do you do exercise		
One hour (Reference category)	1.00	
2–3 h	2.5 (1.0-6.4)	0.062
4–5 h	1.4 (0.5-4.0)	0.493
6–7 h	2.6 (0.7–9.3)	0.157
More than seven hours	0.5 (0.1–2.3)	0.382
Do you have a regular hobby outside of work		
No (Reference category)	1.00	
Yes	0.9 (0.6–1.5)	0.803
Do you have a primary care provider		
No (Reference category)	1.00	
Yes	0.9 (0.6–1.6)	0.833

*$p < 0.05$

EE and DP compared with those without young children [7]. Individuals with young children were found to have significantly higher EE levels [13, 16, 17]. Additionally, marital status may affect burnout scores: Single faculty members with dependent children report lower overall life satisfaction than married counterparts with or without children [7].

Notwithstanding this evidence, our study revealed that faculty of lower academic ranks were more likely to report higher EE and DP scores than their higher-ranked counterparts. Notably, teaching assistants exhibited a higher median score of EE compared with assistant professors (23.5 vs. 15.0, $p = 0.098$), and a higher median DP score compared with lecturers (3.0 vs. 2.0, $p = 0.024$). This finding aligns with El-Ibiary et al.'s, one of the first studies to suggest that pharmacy faculty members in lower academic ranks (i.e., assistant professors) experience higher levels of EE compared to those in higher academic ranks [7]. Attarabeen's findings also support this result, revealing that faculty members of lower ranks—such as assistant professors—experience higher levels of burnout compared with those in higher-ranked positions [18]. This may be explained by a comparative lack of social networks for newer faculty members, coupled with less control over their workload and stress related to success and promotion, compared with their more senior colleagues.

Mentoring is defined as "a nurturing process whereby a more experienced individual guides and supports a less experienced individual to promote their professional and personal development" [19]. Mentoring programs can be formal or informal, with formal programs typically involving more structured support. Our study revealed significant differences regarding pharmacy faculty burnout and mentorship types. Respondents with formal mentor relationships exhibited lower median DP scores than those with informal mentor relationships (1.5 vs. 7.0, $p = 0.053$), suggesting that such structured programs increase the probability of mentees receiving mentorship in the initial phase. Formal mentor relationships offer the better option in providing structure to the process, assisting mentees as they navigate the institution's organization and framework [19]. El-Ibiary also found that individuals with mentors had lower self-reported DP scores than their peers without mentors [7]. Therefore, effective mentoring can lead to greater job satisfaction, reduced risk of burnout, and enhanced opportunities for success within an institution [19].

These predictors are significant, as consequences attributed to burnout include illicit drug use, alcohol abuse, high depression rates, and high employee turnover rates [16]. Burnout greatly impacts individual well-being and can negatively affect one's community at large. Barton et al. reported that over 40% of medical faculty members anticipate leaving academia owing to burnout [6].

Table 4 Median burnout score stratified by participants' characteristics

Variable	Median emotional exhaustion score	*P*-value	Median depersonalization score	*P*-value	Median personal accomplishment score	*P*-value
Gender						
Male	16.0	0.066	2.0	0.634	37.0	0.464
Female	21.0		3.0		38.0	
Mean age category						
Less than 39.6 years	19.0	0.211	2.0	0.927	37.0	0.868
39.6 years and older	14.0		2.0		37.0	
Nationality						
Saudi	19.0	0.087	2.0	0.429	38.0	0.034*
Non-Saudi	14.0		2.0		35.0	
Marital status						
Single	20.5	0.680	3.5	0.427	37.5	0.495
Married	17.0		2.0		37.0	
Divorced	15.5		1.5		41.5	
Do you have children						
No	16.0	0.040*	2.0	0.031*	37.0	0.589
Yes	28.5		3.5		38.5	
The median number of children category						
Less than three children	19.0	0.200	2.0	0.208	37.0	0.952
Three children and more	16.0		1.0		37.0	
Academic rank						
Teaching assistant	23.5	0.098	3.0	0.024*	38.0	0.800
Lecturer	18.0		2.0		37.0	
Assistant professor	15.0		2.0		37.0	
Associate professor	21.5		5.0		37.5	
Professor	13.0		1.0		35.0	
Do you have administrative title						
No	17.0	0.930	2.0	0.184	37.0	0.274
Yes	19.0		2.0		37.0	
Type of institution						
Private institution	19.0	0.928	3.0	0.426	37.0	0.997
Governmental institution	17.0		2.0		37.0	
Length of time pharmacy college established						
Less than five years	16.0	0.229	2.0	0.571	41.0	0.706
5–10 years	16.5		1.5		38.0	
More than 10 years	19.0		2.0		37.0	
Mean number of working years in current institution category						
Less than 9.1 years	16.0	0.239	2.0	0.382	37.0	0.842
9.1 years and more	19.0		2.0		36.5	
Monthly salary						
Less than 20,000 SAR	17.0	0.509	2.0	0.463	37.0	0.659
20,000 SAR and above	19.0		2.0		36.0	
Mean number of years post-pharmacy schoolwork experience category						
Less than 14.8 years	17.0	0.662	2.0	0.079	38.0	0.257
14.8 years and more	18.5		3.0		35.0	
Mean number of hours per week of work						
20–40 h	18.0	0.641	3.0	0.535	37.0	0.797
41–50 h	18.0		1.5		37.0	
More than 51 h	17.5		2.0		35.5	
Do you practice clinically						
No	20.0	0.406	2.0	0.320	37.0	0.788
Yes	18.0		2.0		37.0	
Do you have a didactic teaching responsibilities						

Table 4 (continued)

Variable	Median emotional exhaustion score	P-value	Median depersonalization score	P-value	Median personal accomplishment score	P-value
No	19.0	0.517	2.0	0.552	37.0	0.651
Yes	13.0		2.0		37.0	
Do you have a mentor						
No	19.0	0.974	2.0	0.911	41.0	0.399
Yes	17.5		2.0		37.0	
If yes, what is the type of your relationship with your mentor						
Formal	18.0	0.406	1.5	0.053	42.0	0.025*
Informal	26.0		7.0		32.0	
Do you do exercise						
No	16.0	0.255	2.0	0.978	37.0	0.432
Yes	19.0		2.5		36.5	
If yes, what is the number of hours per week do you do exercise						
One hour	13.0	0.125	2.0	0.103	37.0	0.749
2–3 h	19.0		3.5		37.0	
4–5 h	17.0		1.0		36.0	
6–7 h	21.0		1.0		41.0	
More than seven hours	9.0		2.0		35.0	
Do you have a regular hobby outside of work						
No	17.0	0.518	2.0	0.591	37.0	0.957
Yes	18.5		2.0		37.0	
Do you have a primary care provider						
No	19.0	0.556	2.0	0.637	38.0	0.693
Yes	17.0		2.0		37.0	

*$p < 0.05$;**$p < 0.01$

Lin et al.'s 2018 survey examining individuals with careers in academic medicine reported that 17% of medical residents describe burnout as a reason not to pursue an academic position [20]. Nevertheless, there remains a dearth of studies within pharmacy education on the long-term effects of burnout. Continued burnout is anticipated to impact patient care as the pharmacist error rate increases and patient satisfaction is thereby reduced [16]. Little data exists on the effect of pharmacist burnout on students, but researchers surmise that it negatively affects the quality of education.

This study has several limitations. Limitations to the results' validity include a relatively low sample size and response rate. Additionally, our data comprises self-reported questionnaire responses; consequently, a degree of response bias may be present. Thus, the results reflect those individuals interested in participating and who have the capacity to fill out a survey in their personal time, rather than the entire target population. In addition, although faculty academic rank was assessed in relation to burnout, the level of education was not. Further studies are needed to explore the relationship between the level of education and burnout. Lastly, our survey was sent out to all deans of pharmacy colleges; deans who did not respond may have excluded more potential participants. Notwithstanding these limitations, this study remains the sole piece of research evaluating burnout among pharmacy practice faculty in Saudi Arabia.

Conclusion

Pharmacy faculty members at the College of Pharmacy in the KSA are experiencing significant burnout, particularly in the form of EE and low PA. Other factors contributing to higher burnout rates among faculty members include nationality, parental status, academic position, and mentorship style. To address this issue, resources and programs must be developed to aid deans and department chairs in their efforts to reduce and prevent burnout, especially among those in high-risk groups. Further research for this effort may include an exploration of the impact of burnout on measurable outcomes, such as depression, suicide attempts, or violence. Ultimately, this study serves to raise awareness about faculty burnout, prevent or manage burnout among faculty members, and improve job satisfaction and retention rates.

Abbreviations

US	United States
KSA	Kingdom of Saudi Arabia
MBI-ES	Maslach burnout inventory educators survey
EE	Emotional exhaustion
DP	Depersonalization
PA	Personal accomplishment
SD	Standard deviation

IQR   Interquartile range
CI   Confidence interval

Declarations

Ethics approval and consent to participate
This study was approved by the Institutional Review Board of King Saud University without requiring a consent form, given its retrospective nature. (Ref. No. 22/0926/IRB).

Consent for publication
Not Applicable.

Competing interests
The authors declare no competing interests.

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