ORIGINAL ARTICLE

Burnout and Preventive Recommendations among Obstetrics and Gynecology Residents and Fellows in Bhumibol Adulyadej Hospital: A Mixed-Methods Study

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Background: Burnout syndrome (BS) is a condition resulting from continuous professional stress. Burnout has many symptoms that combine to affect physicians and other healthcare professionals with low-quality work or even an inability to continue working.

Objective: To assess the prevalence of BS and contributing factors.

Materials and Methods: The present study was a mixed-method study, with surveys and semi-structured individual interviews. It was conducted at the Department of Obstetrics and Gynecology (OB-GYN), Bhumibol Adulyadej Hospital, Royal Thai Air Force, Bangkok, Thailand between March 2022 and February 2023. Participants were recruited from physicians attending the residency and fellowship programs in OB-GYN. Participants were instructed to fill out the self-administered and structured interview questionnaires. The questionnaires consisted of demographic data and the Thai version of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), consisting of three dimensions: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA).

Results: Nineteen participants were recruited. Prevalence of BS was 63.2% (12 out of 19). High EE, high DP, and low PA were 57.9% (11 out of 19), 15.8% (3 out of 19), and 47.4% (9 out of 19), respectively. BS-associated factors were age, early years of training, graduation from the five oldest medical schools, delayed first payment, few years of practice, satisfaction in the medical profession, work hours, fewer sleep hours, high patient load, and examinations. Factors contributing to BS from the interview were high workload, education, seniority, hospital rules, peer relationships, internship to residency transition, and family.

Conclusion: The prevalence of BS was 63.2%. BS prevention recommendations included avoiding of high workload, both during and outside of official working hours, younger and less experienced trainees, delayed income payment, and inadequate rest.

Keywords: Burnout; Obstetrics and gynecology; Residency and fellowship

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Burnout syndrome (BS) is a condition caused by continuous professional stress resulting in inability to correctly manage the work as needed[1]. It was assigned a disease code in the International Classification of Diseases (ICD-11). BS is categorized by three dimensions: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA)[2]. EE is excessive physical and emotional exertion. DP is an individual's attempt to distance themselves from others. PA is a reduction in professional efficiency.

BS in residents and fellows of obstetrics and gynecology (OB-GYN) specialties is theorized to be notably high due to heavy workloads, working with sick patients, lack of autonomy, poor work-life balance, and high patient expectations[3]. Bhumibol Adulyadej Hospital (BAH) is the supra-tertiary referral hospital, which is located in the northern part of Bangkok, the capital city of Thailand.

Numerous studies reported the prevalence of BS in OB-GYN residents and fellows ranging from 36% to 88.5%[4-7]. The present study focused on identifying the prevalence of BS in OB-GYN residents and fellows at BAH, Thailand. Identifying contributing factors could be instrumental in creating

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preventative recommendations and protocols.

Materials and Methods

The present study was conducted at BAH, Royal Thai Air Force, Bangkok, Thailand. It was a concurrent mixed-methods design with equal weighting of quantitative and qualitative components. Simultaneous data collection, with both quantitative and qualitative components, was performed. The study period was between March 2022 and February 2023. The BAH Institutional Review Board approved of the present study in 2021 (IRB No. 106/64). The study was registered in the Thai Clinical Trials Registry on 21 January 2022 (ID No. TCTR20220121001).

OB-GYN residents and fellows trained at BAH during the academic year 2021 were recruited. Exclusion criteria included trainees with diagnosed psychological conditions, as well as those taking antipsychotic medication. Self-administered and structured interviewer questionnaires were used in the present study.

The first part of the questionnaire consisted of demographic data, attitude towards work, work-related predisposing factors, learning-related predisposing factors, and Maslach Burnout Inventory-Human Services Survey (MBI-HSS) Thai Version (Mind Garden Inc, CA, USA). The MBI-HSS questionnaire consisted of three dimensions, namely EE, DP, and PA with 22 items. Each item used the Likert-type scale, which was labeled at each point and ranged from 0 (never) to 6 (every day). Cut-off values categorized as follows: EE domain with low for 16 or below, moderate for 17 to 26, and high for 27 and above, DP domain with low for 6 or less, moderate for 7 to 12, and high for 13 and above, and PA domain with high for 39 or more, moderate for 32 to 38, and low for 31 or less. Each dimension's score was summed and categorized into low, middle, and high tiers. BS was diagnosed in subjects who had high EE, high DP, or low PA level[2].

The second part of the questionnaire was a semi-structured interview. Interviews were performed by a single researcher. In-depth interviews with each participant took between 45 and 60 minutes. These interviews consisted of three main research questions regarding burnout, risk factors, and suggestions for improving trainee working conditions.

Sample size was calculated according to Hennink et al.'s study[8]. Interviews were performed until a satisfactory level of information was gathered. Eighteen subjects were needed for statistical power.

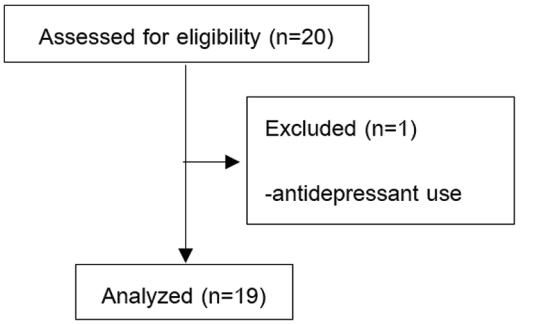

Figure 1. Flow diagram of the study among residents and fellowship OB-GYN.

BS: burnout syndrome, OB-GYN: Obstetrics and Gynecology

Ten percent compensation for data loss was applied. The sample size in the present study was 20 cases.

Quantitative data were analyzed using PASW Statistics for Windows, version 18.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were generated and provided as frequencies, percentages, mean ± standard deviations, or medians with interquartile ranges. Fisher's exact test and chi-square test were used to perform group comparisons. The student t-test and Mann-Whitney U test were used to assess each continuous variable correlated to each burnout subscale. For inclusion and exclusion criteria, the probability criterion for inclusion and exclusion was 0.05.

A thematic analysis was utilized to analyze qualitative data. The substance of in-depth interviews was accessed by transcription of audio recordings from participant interviews. Organizing information generated data codes, analyzing and synthesizing code to themes, and presenting in analytic induction. Qualitative data management was assisted by ATLAS.ti 22 for Windows (Cleverbridge AG, Cologne, GmBH). Triangulation between quantitative and qualitative findings was performed in each questionnaire to increase robustness.

Results

Twenty subjects were enrolled. One participant was excluded due to a history of prescribed antidepressant medication, with the remaining 19 participants being included in the quantitative and qualitative analyses. The questionnaire was completed at a rate of 100%. The flow chart is presented in Figure 1. The average age of participants was 30.5 years old. Most participants were female (16 out of 19) and single (14 out of 19). BS was found among younger residents, OB-GYN residents, medical

Table 1. Baseline characteristics and attitude towards work according to the presence of BS

	All	BS		p-value
		No (n=7)	Yes (n=12)	
Age (years); mean±SD	30.5±2.3	30.6±0. 6	29.7±2.3	0.048[a]
Female; n (%)	16 (84.2)	6 (85.7)	10 (83.3)	0.704
Single; n (%)	14 (73.7)	5 (71.4)	9 (75.0)	0.604
GPA; mean±SD	3.2±0.3	3.2±0.4	3.2±0.2	0.742[a]
YPOD-MD (years); mean±SD	6.3±1.7	8.0±1.2	5.3±1.6	<0.001[a]
O5MS; n (%)	11 (57.9)	7 (100.0)	4 (33.3)	0.013
Training program; n (%)				<0.001
Resident	13 (68.4)	1 (14.3)	12 (100.0)	
Fellowship	6 (31.6)	6 (85.7)	0 (0.0)	
IDR (USD/month); n (%)	0.110			
429 to 714	7 (36.8)	1 (14.3)	6 (50.0)	
>714 to 1,000	7 (36.8)	2 (28.6)	5 (41.7)	
>1,000	4 (26.4)	4 (57.1)	1 (8.3)	
DFP; n (%)	6 (31.6)	0 (0.0)	6 (50.0)	0.044
SUDP 12; n (%)	3 (15.8)	0 (0.0)	3 (25.0)	0.263
RDP 12; n (%)	8 (42.1)	2 (28.6)	6 (50.0)	0.633
CRDP 12; n (%)	18 (94.7)	7 (100.0)	11 (91.7)	0.632
SMP; mean±SD	3.6±0.8	4.1±0.4	3.3±0.8	0.010[a]
Average per week (hours); median (IQR)				
Family‡	7.0 (3.0 to 28.0)	14.0 (5.3 to 32.0)	2.5 (2.0 to 3.0)	0.421[b]
Exercise	2.0 (0.0 to 5.0)	4.0 (1.0 to 6.0)	1.0 (0.0 to 3.0)	0.251[b]
Work	45.0 (40.0 to 61.5)	45.0 (40.0 to 55.0)	65.0 (50.0 to 80.0)	0.242[b]
Extra work	21.5 (18.5 to 45.0)	21.0 (18.5 to 40.0)	47.0 (40.0 to 54.0)	0.001[b]
Paperwork	10.0 (7.0 to 18.0)	10.0 (7.0 to 15.5)	39.0 (8.0 to 70.0)	0.687[b]
Average per week (cases); median (IQR)				
OPD	42.5 (30.0 to 70.0)	40.0 (22.5 to 50.0)	67.5 (35.0 to 100.0)	0.419[b]
IPD	17.5 (12.0 to 30.0)	0.0 (0.0 to 4.5)	7.5 (4.5 to 11.5)	0.008[b]
Surgery†	5.0 (3.0 to 10.0)	5.0 (3.0 to 8.0)	7.5 (5.0 to 10.0)	0.013[b]
Average activity				
Sleep/day (hours); mean±SD	5.7±1.3	6.7±0.9	4. 9±0.9	0.002[a]
Reading/weeks (hours); median (IQR)	10.0 (5.0 to 13.0)	2.0 (1.0 to 3.0)	3.0 (2.0 to 4.0)	0.098[b]
Academy/month; median (IQR)	2.0 (1.0 to 3.0)	3.0 (2.0 to 3.0)	1.5 (1.0 to 2.0)	0.566[b]
Examinations/year; mean±SD	2.2±0.9	1.1±0.4	2.8±0.6	<0.001[a]

SD=standard deviation; IQR=interquartile range; BS=burnout syndrome; GPA=grade point average; YPOD-MD=years of practice after obtaining a doctor of medicine degree; O5MS=five oldest medical schools in Thailand; IDR=income during residency training; DFP=delayed payment of the first salary; SUDP 12=history of sedative drug using within the past 12 months; RDP 12=having considered resignation in the past year; CRDP 12=history of having considering of resignation in the past year; SMP=still having satisfaction in their status of medical profession in their career path; OPD=out-patient department; IPD=inpatient department

‡ Family: time spent of the participant to live together with their family after the working hours, † Surgery: surgical procedures

(a) Student t-test, (b) Mann-Whitney U test

schools established less than 20 years, delayed first payment after acceptance of assignment, and low satisfaction with the medical profession (SMP) with statistical significance. Other demographic characteristics of both groups were comparable as shown in Table 1.

Average family time, exercise, workload, and paperwork of BS and non-BS groups were comparable. Subjects in the BS group had more extra work than those without BS at 47.0 versus 21.0 (p=0.001) as shown in Table 1.

Median cases at out-patient department (OPD), inpatient department (IPD), and surgery were 42.5, 17.5, and 5.0 per week, respectively. Participants with BS had more cases of IPD and surgery than non-BS with statistical significance.

Average hours of sleep per day, professional reading per week, academic activity per month, and

Table 2. The proportion of burnout subscales according to the Maslach Burnout Inventory in OB-GYN residents and fellows

	Levels of burnout; n (%)		
	Low	Moderate	High
EE	3 (15.8)	5 (21.3)	11 (57.9)
DP	10 (52.6)	6 (31.6)	3 (15.8)
PA	9 (47.4)	2 (10.5)	8 (42.1)

EE=emotional exhaustion; DP=depersonalization; PA=personal accomplishment; OB-GYN=Obstetrics and Gynecology

Table 3. Factors contributing to BS and suggestions for lowering resident BS (n=19)

	Yes; n (%)	No; n (%)
Factors contributing to BS		
High workload and work-life balance	14 (73.7)	5 (26.3)
Cultural values of the medical community	10 (52.6)	9 (47.4)
Ineffective bureaucratic medical management and didactic delivery	7 (36.8)	12 (63.2)
Regulations of hospitals, divisions, and compensation	8 (42.1)	11 (57.9)
Relationship among peers	8 (42.1)	11 (57.9)
Family responsibility	3 (15.8)	16 (84.2)
Adaptation for going back to training	3 (15.8)	16 (84.2)
Suggestions for lowering resident BS rates		
More leisure times	14 (73.7)	5 (26.3)
Extracurricular activities	8 (42.1)	11 (57.9)
Counseling program	3 (15.8)	16 (84.2)

BS=burnout syndrome

examinations per year of participants were 5.7 hours, 10 hours, 2.0 times, and 2.2 times, respectively. Participants without BS had more sleeping hours per day. Residents with BS reported fewer exams than those without BS. No fellows reported BS when compared to residents.

The participants with high EE, high DP, and low PA from MBI-HSS scores were 57.9% (11 out of 19), 15.8% (3 out of 19), and 47.4% (9 out of 19), respectively as presented in Table 2. Thomas recommended using high EE or high DP as BS indications[9]. Prevalence of BS (high EE or DP) in the present study was 63.2% (95% CI 38.4 to 83.7).

In qualitative research, no indicators of BS were seen in the in-depth interviews of the self-assessment participants. However, the thematic analysis revealed two major themes, factors contributing to BS and suggestions for lowering resident BS rates, as shown in Table 3. When surveyed for opinion regarding aggregating factors for BS, participants indicated high workload and poor work-life balance by 14 out of 19, cultural values of the medical community by 10 out of 19, regulations of hospitals, divisions, compensation, and peer relationships by 8 out of 19. To lower or relieve BS, participants suggested application of more leisure time by 14 out of 19 and arranged extracurricular activities by 8 out of 19. The setup of the counseling program was not considered an acceptable method for lowering BS from 16 out of 19 participant feedback.

From the quantitative aspect, high prevalence of BS was consequent from EE, high workload in and out official time, inadequate sleep, and less experienced participant from the early years of training and younger age. From the qualitative view, feelings of exhaustion, overwhelming workload in official time, and difficulty recovering from out-official time were contextual explanations. Financial problems with the delayed first payments and income inadequacy quantitatively and qualitatively affected throughout the narrative review. However, integration of quantitative and qualitative results could be explained by the linkage factors to BS among trainees in the study site.

Discussion

The present study was conducted among young doctors who attended residency and fellowship programs in OB-GYN at BAH, Bangkok, Thailand. The average age of participants was around 30 years old, which was comparable to previous studies[4,10-12]. Castelo-Branco et al. from Spain reported the average age of OB-GYN resident subjects in their studies at 27 years old[13].

The Becker et al. and Al-Ma'mari et al. studies of OB-GYN residents in 2006 and 2016 reported high rates of BS at 89.8% and 73.7%, respectively[4,10]. Studies from Ryder et al., Castelo-Branco et al., and Morgan et al. who studied OB-GYN residents reported BS rates ranging from 51.3% to 63%[12-14]. Young participants in medical establishments had higher workloads than senior participants. Senior doctors with work experience had more supervisory roles when compared to junior staff, who were burdened with a higher relative portion of operating work itself. The present study findings showed that the residency training program had higher correlation to BS than the fellowship program. This is because fellowship members were consultants to residents. In medical culture, young physicians have little authority to make decisions on their patients. They need to consult their supervisors. The lack of autonomy was a major problem among young physicians, contributing to higher BS when compared to more senior physicians. From the current study, the

short time interval from MD graduation to residency training was significantly related to high BS.

In the present study, OB-GYN residents and fellows who received MD diplomas from the oldest five medical schools in Thailand showed lower BS percentage than those from other institutions. These well-established medical schools had more conservative cultures. Older medical faculties had more strict regulations and powerful resources for professional excellence. Medical students from older establishments saw the hierarchical structure of faculty, fellowships, and residents, and understood their own roles in the current position in the medical profession. Interview data showed residents who went to a newer medical school with a more relaxed atmosphere had a hard time adjusting to the hierarchy of the medical profession, resulting in higher BS experiences.

The current work showed that hours spent in OPD were not significantly different between BS and non-BS groups. Time spent in OPD was scheduled and had a definite end-of-shift time thus creating no heavy stress for the doctors. On the contrary, subjects with lots of IPD cases and surgery per week reported high correlation with high BS. Surgery was associated with IPD work and little sleep per day. During OB-GYN training, residents had nighttime assignments to the labor room (LR). Residents assigned to LR duty faced potential surgery and a high number of patients during the night. Consequently, it led to insufficient or intermittent sleep. The findings of the current study are in line with the work of Iorga, Al-Ma'mari, and Castelo-Branco[4,11,13].

In this investigation, subjects who had low SMP had significantly high rates of BS. It supported Al-Ma'mari's work[4]. Many of the present study participants in the BS group reported low SMP as a result of extended waits between starting work and the first paycheck. This happened in free training residents who received salaries from training institutions. It took about three months for a newcomer to be included in the government payment system. The shortage of cash flow to residents during the first three months became a source of disturbed sleep and BS. This phenomenon alleviated and corrected itself after three months. However, the residents and fellows who were sent for training by their workplaces received their salaries directly from their institutions. Their BS complaints were significantly less in the SMP sphere.

Physicians with BS reported detrimental effects to themselves, their patients, and their organizations[15]. Reported outcomes of BS for physicians were depression, suicidal ideation, drug addiction, and resignation from training positions[16]. BS also lead to physicians' delivering substandard, or low quality, care, or harmful management to patients. These could lead to lawsuits and stalling of organization development[3].

One to one interview conducted during this investigation showed that the significant factors contributing to BS as described by participants were high workload and poor work-life balance. Many participants described the high workload during work hours and extra work hours. For example, the number of patients being cared for is large compared to personnel. In addition, there was a lot of paperwork and an electronic health record. Therefore, the free time limitation will affect the balance of work life.

Family responsibilities and adaptation for return to training had only a small contribution to BS. Other factors such as culture of the training medical community, interpersonal relationships among peers, ineffective bureaucratic management, and didactic delivery were not significant contributors to the BS.

As a result of the present study, BS prevention recommendations for the training institution to alleviate BS in physicians in the training program are implementation of extracurricular activities, allotment of leisure time, and making available six-month short-term loans for new training residents. These measures would support resident training and avoid BS in the workplace.

The limitation of the present study was its small sample size, single-institution conduct, self-filled questionnaires, lack of multivariate analysis, and lacking demographic characteristics. The authors had a limited space for residents and fellowship intake annually due to the size of the present study institution. The strength of the study was that the authors were able to identify and establish pain points of BS from participants' firsthand perspective and feedback. These findings allow a revision for the improvement of the onboarding practices to residents and fellows for a better work-life balance.

Conclusion

The prevalence of BS was 63.2% and associated with low professional experience, high workload, low or delayed income, and inadequate rest. Implementation of extracurricular activities, allotment of leisure time, and six-month short-term loans for new training residents were recommended for BS prevention.

What is already known about this topic?

BS is a condition resulting from continuous professional stress resulting in inability to correctly manage the work as needed. BS is categorized into three dimensions, namely EE, DP, and PA. High workloads, working with sick patients, lack of autonomy, poor work-life balance, and increased patient expectations were contributing factors of BS.

What does this study add?

The prevalence of BS in the current study was high. Associated factors of BS were low professional experience, high workload, unreliable income, and rest problems. Implementation of extracurricular activities, allotment of leisure time, and six months short-term loans to supplement new training residents were recommended for BS prevention. From one-to-one interview, BS were not associated with culture of the training medical community, interpersonal peer relationships, ineffective bureaucratic management, and didactic delivery.

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Authors' contributions

WL contributed to study conceptualization, methodology, formal analysis, investigation, data curation, and writing-original draft. BS, KB, and KS provided study supervision, critically revised the manuscript, and approved the final manuscript.

Conflicts of interest

The authors declare no conflict of interest.

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