

---

---

*Cah. Socio. Démo. Méd.,  
Lème année, n°4, p. 501-516 (Septembre-Décembre 2010)*

---

*Cah. Socio. Démo. Méd.,  
50 (4) : 501-516 (September-December 2010)*

---

---

***BURNOUT STATUS OF INTERN DOCTORS  
AND ASSOCIATED FACTORS***

**Funda Sevenscan<sup>1</sup>,  
Ebru Cayir<sup>2</sup>,  
Sarp Uner<sup>3</sup>,**

<sup>1</sup> MD, Public Health Specialist, Diyarbakir Province Health Directory

<sup>2</sup> MD, Hacettepe University Faculty of Medicine Department of Public Health

<sup>3</sup> Assoc. Prof., MD, PhD, Hacettepe University Faculty of Medicine  
Department of Public Health

### ***Burnout status of intern doctors and associated factors***

*It is well known that due to long working hours and stressful working conditions, doctors experience burnout more often than other professional groups. Their career burnout begins in the early years, continues to increase and becomes most evident in the internship of medical school. On this wise, the purpose of this study was to investigate the burnout status of intern doctors and the associated factors.*

*Participants in this cross-sectional study were sixth-year medical students (n=302). Data were collected under observation using a questionnaire including some sociodemographic characteristics and the Maslach Burnout Inventory, SF-36, General Health Questionnaire and COPE Inventory.*

*The mean age of the participants was  $24.5 \pm 1.1$  years and 53.4% of them were male. Mean scores of emotional exhaustion, depersonalization and personal accomplishment were  $25.5 \pm 7.5$ ,  $11.3 \pm 3.9$  and  $24.7 \pm 3.4$ , respectively and the three sub-dimension scores of the burnout scale showed no association with gender. Students' emotional exhaustion scores significantly differed according to the socioeconomic status ( $p < 0.05$ ). Participants who had lower scores on the mental and physical dimensions of SF-36 and higher scores on GHQ-12 showed significantly more emotional exhaustion and depersonalization. Positive coping methods showed negative correlation with the subscales of burnout and individuals using problem-focused coping felt more successful (personal accomplishment) confirming the relationship between mental health and burnout.*

*The medical education curricula (both theoretical and practical studies) should be reviewed and appropriate adjustments should be made according to the needs of intern doctors.*

### ***Le surmenage chez les médecins-assistants et les facteurs qui en découlent***

*Il est bien connu qu'en raison de longues heures de travail et de conditions de travail stressantes, les médecins souffrent de surmenage plus souvent que d'autres groupes professionnels. Leur surmenage professionnel commence dans les premières années, continue à augmenter et devient surtout évident pendant la période d'internat en école de médecine. Sur la base de ce constat, le but de cette étude était d'enquêter sur le niveau de surmenage des médecins-assistants et sur les facteurs qui en découlent.*

*Les participants de cette étude trans-catégorielle étaient des étudiants en sixième année (n=302). Les données ont été recueillies en utilisant un questionnaire incluant quelques caractéristiques socio-démographique et l'Inventaire de surmenage Maslach, SF-36, le questionnaire Général de Santé et l'inventaire de COPE.*

*L'âge moyen des participants était  $24.5 \pm 1.1$  ans et 53.4 % d'entre eux étaient masculin. Les taux moyens d'épuisement psychologique, de dépersonnalisation et d'accomplissement personnel étaient de  $25.5 \pm 7.5$ ,  $11.3 \pm 3.9$  et  $24.7 \pm 3.4$ , respectivement et les trois taux de sous-dimension de l'échelle de surmenage n'ont montré aucune corrélation avec le sexe. Les taux d'épuisement émotionnels des étudiants diffèrent de façon significative selon le statut socio-économique ( $p < 0.05$ ). Les participants qui avaient des taux inférieurs en ce qui concerne les dimensions mentales et physiques de SF-36 et des taux supérieurs pour GHQ-12 ont montré de façon significative plus d'épuisement psychologique et de dépersonnalisation. Les méthodes positives d'adaptation ont montré une corrélation*

*négative entre le surmenage, et les individus utilisant des stratégies de maîtrise centrées sur l'adaptation ont ressentis plus de succès (accomplissement personnel), ce qui confirme le rapport entre la santé mentale et le surmenage.*

*Les programmes de formation médicale (les études tant théoriques que pratiques) devraient être reconsidérés et des adaptations appropriées devraient être faites selon les besoins de médecins-assistants.*



## **I- Introduction**

In 1984, Sidney Zion, a former federal prosecutor and New York Times writer, lost his 18-year-old daughter Libby, who died while under the care of two overworked intern doctors in New York Hospital's Cornell Medical Center emergency room. The case unexpectedly drew attention to the working conditions of intern doctors. He began to question health services and working conditions in which interns regularly undertook 36-hour hospital shifts without counselling. Sidney Zion brought litigation against the hospital because his daughter had received inadequate care and had died at the hands of intern doctors working beyond their capacity. It was ruled that Libby Zion's death was the fault of the educational system of intern doctors. After this widely publicized event, a new regulation in the New York State Health Law was implemented, limiting the weekly working hours of intern doctors. In 2003, a new legislation was signed by the Accreditation Council for Graduate Medical Education, offering a similar arrangement for all institutions in the United States (1,2). It is well known that due to their long working hours and stressful working conditions, doctors experience burnout more often than other professional groups. Their career burnout begins in the early years, continues to increase and becomes most evident in the final year of medical school. Internship is a process in which students work under a heavy workload while assuming responsibility for others' lives as a means of increasing their medical knowledge (3-8). Studies have pointed out that intern doctors are working in highly stressful environments, experience high levels of burnout and have depressive symptoms, which can affect both their patients and the health services negatively (7-9).

When work demands increase and personal autonomy in the work decreases, occupational stress easily leads to burnout. Considering the working conditions of interns - high work demands and low personal control - this group seems to be at risk

of burnout (10–12). The purpose of this study was to investigate the burnout status of intern doctors and the associated factors.

## **2- Methods**

Participants in this cross-sectional study were sixth-year medical students (n=302) during the 2009–2010 academic year. Data were collected under observation using a questionnaire including some sociodemographic characteristics and the Maslach Burnout Inventory (MBI), Short Form (SF)-36 Quality of Life Scale, General Health Questionnaire (GHQ-12), and COPE Inventory. Data were evaluated with the SPSS 15.0 package program. Frequency distributions, chi-square test, difference of means test (t test), analysis of variance (one way ANOVA), and correlation analysis were used.

### ***2.1. Maslach Burnout Inventory (MBI)***

The term “burnout” was first used by Freudenberger, who observed fatigue and disappointment in health workers. It was later developed by Maslach and Jackson (13,14). Maslach defined burnout under three components (15):

- Emotional exhaustion: refers to reduction of the energy and motivation of people as a result of high expectations from employees,
- Depersonalization: refers to desensitization and wish to be away from work as a result of feeling worthless and diminished,
- Personal accomplishment: refers to the feeling of being ineffective and of failing in business.

The scale, which was adapted into Turkish by Cam, was developed for application to service professions. Ergin demonstrated the validity and reliability of the scale in Turkish doctors and nurses (15,16). The self-report scale contains 22 questions, with responses scored on a 5-point Likert scale.

## **2.2. *SF-36 Quality of Life Scale (SF-36)***

This scale assesses eight health-related topics: physical functioning, social functioning, physical role restriction, emotional role restriction, body pain, mental health, energy in life, and general health perception. In each subscale of the form, a high score indicates a higher health-related quality of life. Additionally, the scale can be evaluated in two dimensions as mental and physical subscales, as we used in our study. Higher scores in mental and physical dimensions denote higher health-related quality of life (17). The Turkish validation study of the scale was conducted by Kocyigit and colleagues (18).

## **2.3. *General Health Questionnaire (GHQ)-12***

The GHQ was developed by Goldberg especially to evaluate mental illness in primary care patients. The questionnaire assesses general mental health, and 60, 30, 28 and 12-item forms are available (19). In Turkey, the validity and reliability of the 12-item form, which includes symptoms of anxiety and depression, were reported by Kilic et al. (20). Higher scores reflect probable psychological problems.

## **2.4. *COPE Inventory***

COPE is a self-report scale that contains a total of 60 questions and was developed by Carver et al. in 1989 (21). It consists of 15 subscales. The sum of the first five subscale scores reflects the “problem-focused coping” score, the sum of the subscale scores between 6 and 10 reflects the “emotional-focused coping” score, and the sum of the last five subscale scores reflects the “non-functional/dysfunctional coping” scale. Subscale scores give an indication of which coping behavior participants utilize more. Agargun and colleagues translated the scale into Turkish and conducted validity and reliability tests of the scale (22).

### 3- Results:

The mean age of the participants was  $24.5 \pm 1.1$  years (median: 24.0 years, min-max: 22-30 years). Fifty-three point four percent of the participants were male, and 98.6% were unmarried. Forty-eight point four percent of the participants indicated their family's socioeconomic status as "good". Sixteen point two percent of the last-year students were current smokers, 6.5% had quit smoking, 6.1% often drank alcohol, and 26.0% occasionally drank alcohol.

**Table 1**  
***Distribution criteria of the scale scores (Ankara, 2010, n=277)***

Scales	Subscales	Mean $\pm$ SD <sup>1</sup>	Median	Lowest-Highest
SF-36	Mental dimension	24.3 $\pm$ 5.2	25.0	8-36
	Physical dimension	42.9 $\pm$ 5.3	44.0	18-48
GHQ-12		4.2 $\pm$ 4.0	3.0	0-12
MBI	Emotional exhaustion	25.5 $\pm$ 7.5	26.0	9-45
	Depersonalization	11.3 $\pm$ 3.9	11.0	5-23
	Personal accomplishment	24.7 $\pm$ 3.4	24.0	11-35
COPE	Problem-focused	56.9 $\pm$ 7.1	56.0	33-76
	Emotional-focused	40.2 $\pm$ 7.7	40.0	21-67
	Non-functional	49.6 $\pm$ 6.4	49.0	30-70

<sup>1</sup> Standard deviation

The mean score of the mental and physical dimensions of the SF-36 scale were  $24.3 \pm 5.2$  and  $42.9 \pm 5.3$ , respectively. Mean scores of emotional exhaustion, depersonalization and personal accomplishment were  $25.5 \pm 7.5$ ,  $11.3 \pm 3.9$  and  $24.7 \pm 3.4$ , respectively, while the mean score of the GHQ-12 scale was  $4.2 \pm 4.0$ . Additionally, mean scores of the subscales of problem-focused coping, emotional-focused coping and coping with dysfunctional attitudes were  $56.9 \pm 7.1$ ,  $40.2 \pm 7.7$  and  $49.6 \pm 6.4$ , respectively (Table 1).



**Table 2**  
**Sociodemographic characteristics and scale scores of final-year students**  
**according to their burnout status (Ankara, 2010, n=277)**

	MBI					
	Emotional exhaustion		Depersonalization		Personal accomplishment	
	t/F/ $\chi^2$	p	t/F/ $\chi^2$	p	t/F/ $\chi^2$	P
Gender <sup>1</sup>	0.97	0.34	0.45	0.66	0.68	0.49
Socioeconomic status of the family <sup>2</sup>	4.53	0.01	1.72	0.18	2.32	0.10
Current smoker <sup>2</sup>	3.59	0.03	1.18	0.31	0.57	0.57
Drinks alcohol often <sup>2</sup>	6.43	<0.01	4.90	<0.01	2.19	0.09
SF-36-Mental dimension <sup>3</sup>	39.03	<0.01	30.51	<0.01	27.06	<0.01
SF-36-Physical dimension <sup>3</sup>	18.26	<0.01	11.17	<0.01	4.43	0.04
GHQ-12 <sup>3</sup>	41.68	<0.01	21.35	<0.01	18.91	<0.01
COPE-Problem-focused coping <sup>3</sup>	0.22	0.64	1.74	0.19	4.86	0.03
COPE-Emotional-focused coping <sup>3</sup>	0.14	0.71	2.92	0.09	0.16	0.69
COPE-Non-functional coping <sup>3</sup>	2.02	0.16	0.28	0.59	0.59	0.44

<sup>1</sup> significance of the difference between means test (t test)

<sup>2</sup> analysis of variance (one way ANOVA)

<sup>3</sup> chi-square test

In our study, the three sub-dimension scores of the burnout scale showed no association with gender. Students' emotional exhaustion scores significantly differed according to the socioeconomic status ( $p < 0.05$ ). Emotional exhaustion scores were higher among the students who indicated the socioeconomic status of their family as "middle". No significant difference was found in depersonalization and personal accomplishment scores according to socioeconomic status of the family. Current smokers had higher scores on the emotional exhaustion subscale and participants who drank alcohol often had higher scores on both the emotional exhaustion and depersonalization subscales ( $p < 0.05$ ). Participants who had lower scores on the mental and physical dimensions of SF-36 and higher scores on GHQ-12 showed significantly more emotional exhaustion and depersonalization. This group also had



lower personal accomplishment scores. While there was no significant difference between scores of emotional-focused coping and non-functional coping based on subscale scores of MBI, participants using problem-focused coping methods had significantly lower scores on personal accomplishment.

**Table 3**  
**Correlation of burnout status with the scores of other scales**  
**in final-year students (Ankara, 2010, n=277)**

Scales	Subscales	MBI		
		Emotional exhaustion	Depersonalization	Personal accomplishment
SF-36	Mental dimension	-0.57**	-0.46**	0.41**
	Physical dimension	-0.35**	-0.29**	0.25**
GHQ-12		0.56**	0.45**	-0.41**
COPE	Problem-focused coping	-0.16*	-0.13	0.24**
	Emotional-focused coping	0.16*	0.24**	-0.17*
	Non-functional coping	-0.04	0.04	0.09

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

We found a negative correlation between dimensions of SF-36 (mental and physical) and emotional exhaustion/depersonalization subscales, but a positive correlation with the personal accomplishment subscale ( $r: -0.57$ ,  $r: -0.46$ ,  $r: 0.41$ ). A positive correlation was found between GHQ-12 scores and emotional exhaustion and depersonalization scores, while there was a negative correlation with personal accomplishment ( $r: 0.56$ ,  $r: 0.45$ ,  $r: -0.41$ ). Problem-focused coping showed a negative correlation with emotional exhaustion/depersonalization and a positive correlation with personal accomplishment ( $r: -0.16$ ,  $r: -0.13$ ,  $r: 0.24$ ). We also found that emotional-focused coping showed a positive correlation between emotional exhaustion/depersonalization and a negative correlation with personal accomplishment ( $r: 0.16$ ,  $r: 0.24$ ,  $r: -0.17$ ), while non-functional coping showed a negative correlation with emotional exhaustion and a positive correlation with

depersonalization/personal accomplishment ( $r$ : -0.04,  $r$ : 0.04,  $r$ : 0.09).

#### **4- Discussion**

It is noteworthy that although the topic of intern burnout has been raised previously, there are few studies addressing this problem (20-24). Burnout syndrome is not limited to being only a phenomenon affecting health care providers, it affects patients, health service quality and thus the whole community as well (7,23-25). In our study, burnout scores did not show a significant difference by gender. In other studies assessing the impact of gender on burnout, emotional exhaustion scores were found to be higher in women (10,16,26). The higher levels of burnout that women demonstrate may be related to a variety of factors: women give more importance to other people they care for due to their gender roles, and this situation increases the emotional exhaustion in women (15). Another concept underlines that burnout in women is also related with non-business factors, although in men it is only determined by work-related stress. Although we were unable to determine any relationship between gender and burnout, in societies in which women carry significant non-work responsibilities, burnout is more likely to be affected by the gender variable (27).

Students who indicated their family's socioeconomic status as "middle" demonstrated significantly higher emotional exhaustion scores than the students indicating it as "good/very good". As other studies showed the effect of socioeconomic status on the health of intern doctors (28), our result also recalls socioeconomic status as an important social determinant of health.

According to the results of previous studies, substance use is seen more frequently in individuals with burnout (23-25). In our study, emotional exhaustion scores were significantly higher in current smokers, and both emotional exhaustion and

depersonalization scores were significantly higher in individuals who often drank alcohol. We found high emotional exhaustion and depersonalization scores and low personal accomplishment scores in the participants who received low scores on the physical and mental dimension subscales of the SF-36. Similarly, students who scored high on the GHQ-12 scale (pointing to a possible mental health problem) had high burnout. Consulting the relevant literature, we know that burnout in intern doctors is associated with poor health status, depression and anxiety (7,23–25,29–31). Table 3 shows the direction and the power of correlation between subscales. Associations we determined in this study suggest that burnout syndrome is a phenomenon affecting people as a whole, including their physical and mental health.

Individuals using problem-focused coping felt more successful (personal accomplishment). In this case, students feeling successful use more positive coping methods to solve problems, confirming the relationship between mental health and burnout. As an important group in health service, nurses were exposed to similar stresses, and a study in nurses showed that subjects who had higher levels of emotional burnout use non-functional coping more commonly than others (32). However, we did not find any relationship between non-functional coping and burnout subscales.

Although interns lack sufficient authority with respect to treatment, internship is an important period for their transition to the medical profession. Over the last decade, studies in different countries show that interns have higher levels of burnout (7,28,33). Studies evaluating burnout and work conditions confirm that intern doctors are perceived as “workers used in various capacities throughout the long work day” rather than as candidates “still learning and gaining experience” (3,5,7,9,28). These conditions negatively affect the physical and mental health of intern doctors and can lead to their burnout. In this study, the relationship between burnout and factors such as jobs unrelated

to one's education, work load, length of working hours and night shifts, sleep deprivation, and physical fatigue were not investigated. However, we can consider that the assignment of unrelated tasks to interns for reducing the overall workload in the clinic could decrease an intern's enthusiasm. Some reviews have stated that heavy work load and low personal control ensure the emergence of burnout (11,12). In future studies, it would be useful to examine job descriptions, competencies, responsibilities, and expectations of interns.

In this study, we did not evaluate the effects of working without pay among intern doctors. Interns often work under intense conditions, but receive no compensation for their efforts. Thus, it is possible that burnout is related with this interim position and the difficulty they feel in assigning a value to their training. This issue should also be included in future studies. While acknowledging a need for improvement in the working conditions of interns, due to the nature of the health care profession, health workers will always be overworked and continually face stressful situations. Therefore, individual or group therapy should be provided for intern doctors, and it should be easily accessible to them at their place of employment on an as-needed basis. Furthermore, different relaxation techniques can be tried such as art therapy.

In conclusion, the correction of intern working conditions to bring them in compliance with the requirements and recommendations is needed to ensure their biopsychosocial well-being. For this purpose, detailed studies are needed to first identify the problems, as reported by the interns. Following these studies, the medical education curricula should be reviewed, and both theoretical and practical studies, which were difficult for the students or failed to be of benefit, must be re-examined and the appropriate adjustments made.



## References

1. <http://www.washingtonpost.com/wp-dyn/content/article/2006/11/24/AR2006112400985.html>, Accessed : 08/26/2010
2. [http://en.wikipedia.org/wiki/Libby\\_Zion\\_law](http://en.wikipedia.org/wiki/Libby_Zion_law), Accessed : 08/26/2010
3. Nash IS. Resident burnout. *Ann Intern Med.* 2002;137:698-700.
4. Cohen JJ. Heeding the plea to deal with resident stress. *Ann Intern Med.* 2002;136:394-395.
5. Graham WR. Resident burnout. *Ann Intern Med.* 2002;137:698-700.
6. Beckman JA, Fang JC. Resident burnout [letter]. *Ann Intern Med.* 2002;137:698-700.
7. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med.* 2002;136:358-367.
8. Bellini LM, Baime M, Shea JA. Variation in mood and empathy during internship. *JAMA.* 2002;287:3143-3146.
9. Bellini LM, Shea JA. Mood change and empathy decline persist during three years of internal medicine training. *Acad Med.* 2005;80:164-167.
10. Geurts S, Rutte C, Peeters M. Antecedents and consequences of work-home interference among medical residents. *Soc Sci Med.* 1999;48:1135-1148.
11. Linzer M, Visser MR, Oort FJ, et al. Predicting and preventing physician burnout: results from the United States and the Netherlands. *Am J Med.* 2001;111:170-175.
12. Campbell DA Jr, Sonnad SS, Eckhauser FE, Campbell KK, Greenfield LJ. Burnout among American surgeons. *Surgery.* 2001;130:696-702.
13. Freudenberg HJ. Staff burnout. *J Soc Issues* 1974;30:159-165.
14. Maslach C, Jackson SE. *Maslach Burnout Inventory Manual.* 2<sup>nd</sup> ed. Consulting Psychological Press, Palo Alto, California, 1981; 1-17.
15. Maslach C, Jackson SE, Leiter MP. *Maslach Burnout Inventory.* 3rd ed. In: Zalaquett CP, Wood RJ, eds. *Evaluating Stress: A Book of Resources.* Lanham, Md: Rowman & Littlefield Publishers Inc; 1997:191-218.
16. Ergin C. Burnout among Doctors and Nurses and Adaptation of Maslach Burnout Inventory. In: Bayraktar R, Dağ İ, eds. *VII. Scientific Studies in the National Congress of Psychology, Ankara, Turkish Psychological Association Publication, 1992: 144.*
17. Medical Outcomes Study: 36-Item Short Form Survey [http://www.rand.org/health/surveys\\_tools/mos/mos\\_core\\_36item.html](http://www.rand.org/health/surveys_tools/mos/mos_core_36item.html), Accessed : 09/17/2010
18. Koçyiğit H, Aydemir Ö, Fişek G. Reliability and validity of Turkish version of Short Form-36. *The Turkish Journal of Drugs and Therapeutics* 1999;12:102-106.



19. Goldberg DP, Blackwell B. Psychiatric illness in general practice. A detailed study using a new method of case identification. *Br Med J* 1970;1:439-443.
20. Kılıç C. General Health Questionnaire: reliability and validity. *Turk J Psychiatry* 1996;7:3-9.
21. Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: a theoretically based approach. *J Pers Soc Psychol* 1989;56:267-283.
22. Ağargün MY, Beşiroğlu L, Özer ÖA, Kara H. COPE: a preliminary study of the psychometric properties. *Anatolian J Psychiatry* 2005;6:221-226.
23. Thomas NK. Resident burnout. *JAMA* 2004;292:2880-2889.
24. Prins JT, Gazendam-Donofrio SM, Tubben BJ, van der Heijden FM, van der Wiel HB, Hoekstra-Weebers JE. Burnout in medical residents: a review. *Med Educ* 2007;41:788-800.
25. Prins JT, van der Heijden FM, Hoekstra-Weebers JE, Bakker AB, van de Wiel HB, Jacobs B, Gazendam-Donofrio SM. Burnout, engagement and resident physicians' self-reported errors. *Psychol Health Med* 2009;14:654-666.
26. Garza JA, Schneider KM, Promenence P, Mong M. Burnout in residency: a statewide study. *South Med J* 2004;97:1171-1173.
27. Serinken M, Ergör A, Çımrın AH, Ersoy G. Levels of burnout in emergency physicians in the province of Izmir. *Community and Physician* 2003;18 (4):293-299.
28. Güdük M, Erol Ş, Yağcıbulut Ö, Uğur Z, Özvarış ŞB, Aslan D, Burnout syndrome among last year medical students of a medical faculty in Ankara, STED, 2005;8:171.
29. Van der Heijden F, Dillingh G, Bakker A, Prins J. Suicidal thoughts among medical residents with burnout. *Arch Suicide Res* 2008;12:344-346.
30. Hillhouse JJ, Adler CM, Walters DN. A simple model of stress, burnout and symptomatology in medical residents: a longitudinal study. *Psychol Health Med* 2000;5:63-73.
31. Lemkau JP, Purdy RR, Rafferty JP, Rudisill JR. Correlates of burnout among family practice residents. *J Med Educ* 1988;63:682-691.
32. Gibbons C. Stress, coping and burn-out in nursing students. *Int J Nurs Stud* 2010;47(10):1299-1309.
33. Yao DC, Wright SM. National survey of internal medicine residency training program directors regarding problem residents. *JAMA* 2000;284:1099-1104.