



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.2652824>Available online at: <http://www.iajps.com>

Research Article

**A CROSS-SECTIONAL RESEARCH STUDY TO DETERMINE  
THE PREVALENCE OF BURNOUT IN POSTGRADUATE  
DOCTORS ACCORDING TO THEIR SPECIALTY, IN  
SERVICES HOSPITAL, LAHORE**<sup>1</sup>Dr Saima Fareed, <sup>2</sup>Ghanwa Abbas, <sup>3</sup>Muhammad Ubaid ur Rehman<sup>1</sup>Faisalabad Medical University (Punjab Medical College Faisalabad)<sup>2</sup>Allama Iqbal Memorial Teaching Hospital Sialkot<sup>3</sup>Allama Iqbal Memorial Teaching Hospital Sialkot**Article Received:** February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

**Aim:** The objective of the research was to determine occurrence of burnout among postgraduate doctors as per their specialty.

**Introduction:** Burnout refers to higher level of emotional exhaustion, reduced personal accomplishment and higher level of depersonalization.

**Method:** This cross-sectional research was carried out at Services Hospital, Lahore from 09-05-19 to 05-06-19. Through non-probability sampling technique, we short listed two hundred participants. Research utilized Maslach Burnout Inventory. We used SPSS for outcomes analysis.

**Results:** The outcomes of burnout according as per the doctor's specialty were as pathology (17.5%), gynecology (30%), surgery (55%), medicine (90%) and others (42.5%).

**Conclusions:** Various burnout degrees were present in the specialist with higher levels of surgical interventions and medicine; whereas the pathology was at lowest level. Age, gender, time served and working hours of the postgraduates influenced the burnout prevalence. Higher burnout incidence demonstrates the requirement of proper strategies in order to avoid adverse effects on the life quality of the undergraduates and patient care quality.

**Keywords:** Burnout Syndrome, Postgraduates, Inter-Specialty Variation and Associated Factors.

**Corresponding author:****Dr. Saima Fareed,**

Faisalabad Medical University (Punjab Medical College Faisalabad)

QR code



Please cite this article in press Saima Fareed et al., A Cross-Sectional Research Study To Determine The Prevalence Of Burnout In Postgraduate Doctors According To Their Specialty, In Services Hospital, Lahore., Indo Am. J. P. Sci, 2019; 06(04).

**INTRODUCTION:**

Burnout is a “triad” of emotional exhaustion, depersonalization and reduced personal accomplishment (2). Another interesting fact to ponder upon is that although, no specific diagnosis of burnout is mentioned in the Diagnostic and Statistical Manual of Mental Disorders, even then burnout is categorized as a clear syndrome with noticeable outcomes which indeed is a recurrent reason for medical excuses from work, and thus the impact on health-related economics is observed significantly (3). Taking in account the heavy emotional requirements of the work environment, doctors are vulnerable to burnout above and beyond the usual workplace stress. Hence, burnout is linked with a various kind of undesirable pessimistic effects on patient’s wellbeing (2). Burnout is a potential harbor for psychosocial adversities affecting not only the subjects but also the organizations which hire them. It can target physical and/or mental health, leading to psychopathological (e.g. anxiety, obsession-compulsion, interpersonal sensitivity, depression, hostility, paranoid ideation, alcoholism and addictions) and/or psychosomatic disorders (e.g. Cardiorespiratory alterations, severe headaches, gastritis, ulcers, insomnia, dizziness etc.).

While on the other hand, organization suffers quantitative as well as qualitative loss of its output (4). The latest researches emphasize greatly on the disappointing observation i.e. “The rate of burnout among doctors is gradually increasing worldwide”. Burnout specialists at the AMA and Mayo clinic carried out a survey of 6880 doctors, with the objective of assessing and comparing burnout rates of 2011 with 2014. The results (given below) favored the stated observation completely (5).

- Family medicine (51.3% in 2011 versus 63% in 2014)
- General surgery (42.4% versus 52.7%)
- Pathology (37.6 versus 52.5%)
- General pediatrics (35.3% versus 46.3%)

Pakistan, being a developing country not only lacks scientific basis (including relevant researches) for this entity but also the standards for its diagnosis, classification and treatment are not well established (3). This research is aimed to study the rate of burnout among the post graduate doctors in SERVICES Hospital Lahore. The goal of this review is to provide medical educators and leaders with an overview of the existing factors that contribute to burnout, its inter-specialty variation, and suggestions for interventions to decrease burnout.

**METHOD:**

**Study Design:** Cross sectional study.

**Duration of Studies:**

3 weeks (from 9-5-2016 till -1-6-2016)

**Study settings:** Services Hospital Lahore is 2nd largest tertiary care hospital with 1500 beds after Mayo Hospital. It is a Government owned health institute. It is also a teaching hospital and is affiliated with AIMC or Allama Iqbal Medical College. Students of this college are offered here house training and residency jobs. Services Hospital Lahore has best Trauma center where patients are treating with modern medical equipment and medicines. It offers medical facilities to all including kids, men and women, young and old. Although it is public hospital but its health services are very good and atmosphere is very neat and clean. Patients come here for diseases of eyes, heart, sugar or diabetes, Liver, stomach and children disease.

**Sample Size:** 200 post graduates doctors.

**Sampling Technique:** Non probability purposive technique. Post graduates doctors who have been working for more than 6 months. Post graduates doctors who have been working for less than 6 months. Also, those who are non-cooperative. 200 post graduates doctors fulfilling the inclusion criteria will be included in our study. After an informed consent a demographic profile of each post graduate doctor will be collected. Each doctor will be given Maslach Burnout Inventory, it is 3 sections based self-assessment instrument intended to evaluate degree of burnout syndrome according to inter-specialty variation. All information will be entered in a structured questionnaire (attached). The plan was data will be entered and analyzed in SPSS version 22. Mean and Standard deviation will be calculated for variables e.g. number of working hours of post graduate doctors. Frequency and percentages will be calculated for nominal values.

**RESULTS:**

Three aspects of MBI Inventory were explored. Out of 200 people the ratio of emotional exhaustion from low to medium to high was 73: 104: 23 and in percentage 36.5: 52.0: 11.5). The assessment of depersonalization showed the following results, 14: 54: 132 burnouts in percentage 7.0: 27.0: 66.0). The evaluation of personal achievement showed the following results 85: 42: 73 burnouts and in percentage 42.5: 21.0: 36.5). The percentages of high burnout with respect to emotional exhaustion, depersonalization and personal accomplishment in pathology, surgery, medicine gynecology and others were: (00.0%,22.5%,5.0%,7.5%,22.5%), (35.0%,55.0%,100%,70.0%,70.0%) & (22.5%,45.0%,67.5%,25.0%, 22.5%).

A total of 200 postgraduates participated in the

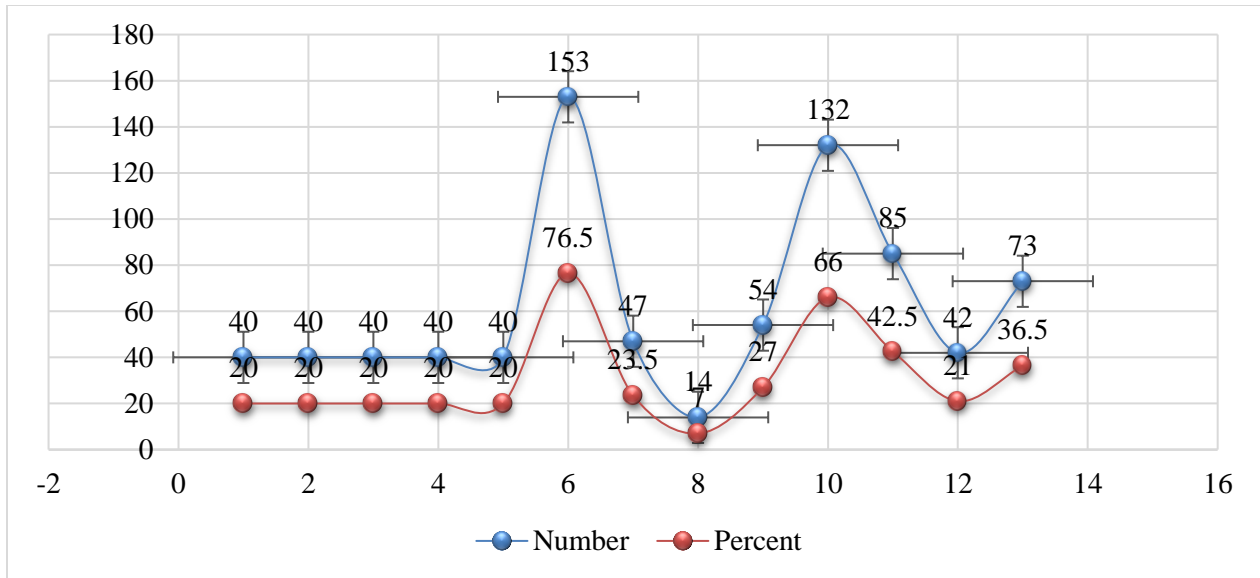
survey. Out of these, 103 (51.5%) were female and 97 (48.5%) were male doctors. MBI research was carried out in five specialties. 40 post-graduates (20%) were taken from each of the five fields; Pathology, Surgery, Gynecology, Medicine and Others. 153 (76.5%) were of the age group 23-29 and 47 (23.5%) doctors fell in the age group of 30-36 years. Out of 200, 145 (72.5%) doctors served time for about 6 months–3 years while rest of them, 55 (27.5%) served for about 4-6 years. 173 (86.5%) doctors had 6-12 working hours and 27 (13.5%) doctors had 13-19 working hours. The means (M) for Emotional exhaustion, De-personalization and Personal Achievement are 20.48, 16.09 and 36.01 and standard deviations (SD) of 8.17, 7.38 and 8.14 have been calculated respectively.

Conclusively, the total high burnout percentage in pathology, surgery, medicine gynecology and others were: 17.5%, 55.0%, 90.0%, 30.0% and 42.5%. Other contributory factors to the prevalence of burnout causing high burnout rate were : gender(

more in male with 63.9 % high burnout as compared to 31.1 % in females), age of post graduates (more in 23-29 with 51.0 % high burnout as compared to 34.0 % in 30-36 years old postgraduates), time served by postgraduates (more in doctors who served for 6 months -3 years with 53.8 % high burnout as compared to 29.1 % in postgraduates who served for 4-6 years) & number of working hours per day (more in physicians who work for 13-19 hours per day with 70.4 % high burnout as compared to 43.4 % in postgraduates working for 6-12 hours per day). For interpretation, the cut off value for burnout is given below: 1. Emotional Exhaustion: Total 17 or less: Low-level burnout, Total between 18 and 29 inclusive: Moderate burnout, Total over 30: High-level burnout, 2. Depersonalization: Total 5 or less: Low-level burnout, Total between 6 and 11 inclusive: Moderate burnout, Total of 12 and greater: High-level burnout. 3. Personal achievement: Total 33 or less: High-level burnout, Total between 34 and 39 inclusive: Moderate burnout, Total greater than 40: Low-level burnout.

**Table – I:** Stratification of Variables

Variables		Number	Percent	Valid Percent	Cumulative Percent
Specialty	Pathology	40	20	20	20
	Surgery	40	20	20	40
	Medicine	40	20	20	60
	Gynecology	40	20	20	80
	Others	40	20	20	100
Age	23 - 29 Years	153	76.5	76.5	76.5
	30 - 36 Years	47	23.5	23.5	100
Depersonalization	Low	14	7	7	7
	Moderate	54	27	27	34
	High	132	66	66	100
Personal Achievement (Burnout)	Low level (Score > 40)	85	42.5	42.5	42.5
	Moderate (Score 34 - 39)	42	21	21	63.5
	High Level (Score < 33)	73	36.5	36.5	100



**Table – II:** Emotional Exhaustion, Depersonalization and Personal Achievement Statistics

Statistics	Emotional Exhaustion	Depersonalization	Personal Achievement
Mean	20.48	16.09	36.01
Std. Deviation	8.171	7.38	8.184

**Table – III:** Variables Stratification

Variables		Number	Percentage
Gender	Male	97	48.5
	Female	103	51.5
Depersonalization	Low	14	7
	Moderate	54	27
	High	132	66
Personal Achievement Level of Burnout	Low (> 40)	85	42.5
	34 - 39	42	21
	< 33	73	36.5
Time Served	6 Months to 3 Years	145	72.5
	4 - 6 Years	55	27.5

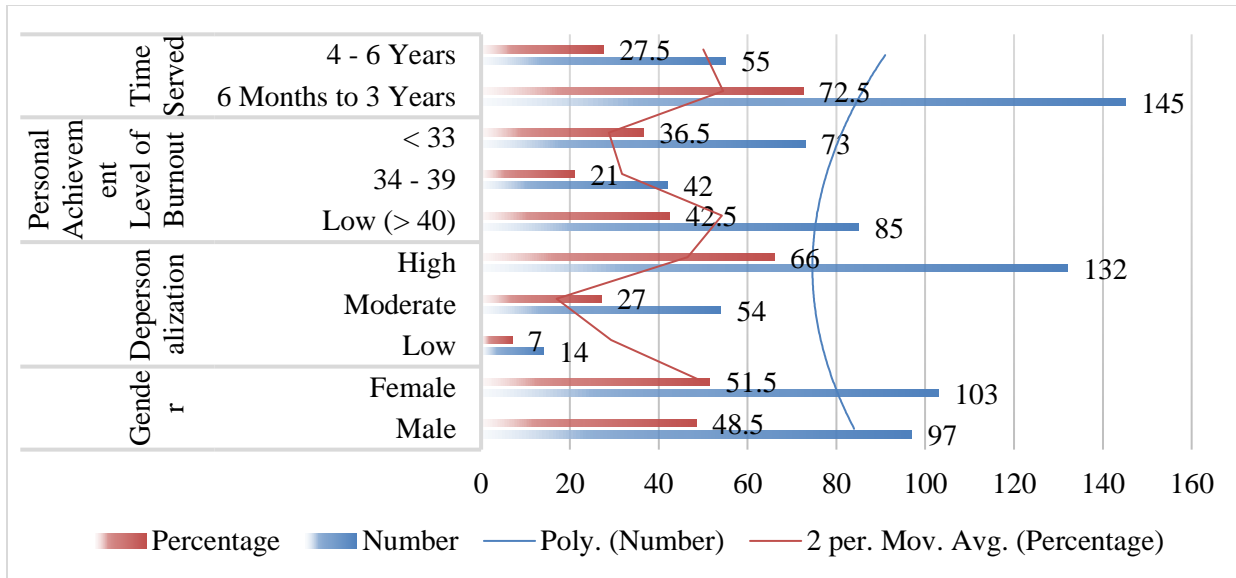


Table – IV: Outcomes of Emotional Exhaustion

Emotional Exhaustion		Pathology	Surgery	Medicine	Gynecology	Others	Total
Low	Count	29	13	5	15	11	73
	% within Specialty	72.50%	32.50%	12.50%	37.50%	27.50%	36.50%
Moderate	Count	11	18	33	22	20	104
	% within Specialty	27.50%	45.00%	82.50%	55.00%	50.00%	52.00%
High	Count	0	9	2	3	9	23
	% within Specialty	0.00%	22.50%	5.00%	7.50%	22.50%	11.50%

Table – V: Outcomes of Depersonalization

Depersonalization		Pathology	Surgery	Medicine	Gynecology	Others	Total
Low	Count	11	2	0	0	1	14
	% within Specialty	27.50%	5.00%	0.00%	0.00%	2.50%	7.00%
Moderate	Count	15	16	0	12	11	54
	% within Specialty	37.50%	40.00%	0.00%	30.00%	27.50%	27.00%
High	Count	14	22	40	28	28	132
	% within Specialty	35.00%	55.00%	100.00%	70.00%	70.00%	66.00%

**Table – VI:** Outcomes of Personal Achievement

Personal Achievement	Pathology	Surgery	Medicine	Gynecology	Others	Total
Low level burnout (Score > 40)	21	10	4	26	24	85
	52.50%	25.00%	10.00%	65.00%	60.00%	42.50%
Moderate burnout (Score 34 - 39)	10	12	9	4	7	42
	25.00%	30.00%	22.50%	10.00%	17.50%	21.00%
High Level burnout (Score < 33)	9	18	27	10	9	73
	22.50%	45.00%	67.50%	25.00%	22.50%	36.50%

**Table – VII:** Specialty Wise Burnout

Specialty of Postgraduates	Low Burnout (1-3)	Moderate burnout (4-6)	High burnout (7-9)	Total	High Burnout Percentage
Pathology	4	29	7	40	17.5
Surgery	0	18	22	40	55
Medicine	0	4	36	40	90
Gynecology	0	28	12	40	30
Others	1	22	17	40	42.5

**Table – VIII:** Gender Wise Burnout

Gender		Low Burnout (1-3)	Moderate burnout (4-6)	High burnout (7-9)	Total
Male	Count	5	30	62	97
	% within gender of postgraduates	5.20%	30.90%	63.90%	100.00%
Female	Count	0	71	32	103
	% within gender of postgraduates	0.00%	68.90%	31.10%	100.00%

**Table – IX:** Age Wise Burnout

Age		Low Burnout (1-3)	Moderate burnout (4-6)	High burnout (7-9)	Total
23-29	Count	2	73	78	153
	% within age of postgraduates	1.30%	47.70%	51.00%	100.00%
30-36	Count	3	28	16	47
	% within age of postgraduates	6.40%	59.60%	34.00%	100.00%

**Table – X: Time Served Versus Burnout**

Time Served		Low Burnout (1-3)	Moderate burnout (4-6)	High burnout (7-9)	Total
6 Months- 3 Years	Count	2	65	78	145
	% within time served by postgraduates	1.40%	44.80%	53.80%	100.00%
4-6 Years	Count	3	36	16	55
	% within time served by postgraduates	5.50%	65.50%	29.10%	100.00%

**Table – XI: Working Hours Versus Burnout**

Number of Working Hours		Low Burnout (1-3)	Moderate burnout (4-6)	High burnout (7-9)	Total
06 to 12	Count	5	93	75	173
	% within number of working hours per day	2.90%	53.80%	43.40%	100.00%
13 to 19	Count	0	8	19	27
	% within number of working hours per day	0.00%	29.60%	70.40%	100.00%

**DISCUSSION:**

As far as degree of burnout was concerned, emotional exhaustion from low to medium to high was 73:104:23 among the 200 postgraduates of JHL when compared to those in Germany 42:28:30, the results for depersonalization were 14:54:132 when compared with those in Germany 25:27:48. Likewise the results for personal achievement were, 85:42:73, which were similar to that of the physicians in Saxony Germany, 36:33:31. Even though the results were almost similar in the two researches, however, in SERVICES Hospital degree of burnout was a little more severe in comparison with the physicians of Saxony, Germany. The study investigated burnout in post graduate doctors using MBI in five different specialties Pathology, Surgery, Gynecology, Medicine and Others (Dermatology, Cardiology, Eye and ENT) in SERVICES Hospital Lahore. The means for emotional exhaustion, depersonalization and personal achievement were calculated as 20.48, 16.09, 36.01 respectively and were found to be similar to those among physicians in Saxony Germany, which were, 21.3, 9.9, 36.3 respectively. The results were almost similar but the level of depersonalization was twice in doctors of JHL as compared to doctors of Saxony. The research conducted in Services Hospital Lahore's post graduate trainees revealed that the highest degree of burnout was found to be associated

with post graduates belonging to specialty of Medicine where 36 out of 40 (90%) trainees showed high degree burnout. Second highest burnout rate was found in post graduate trainees of Surgery where 22 out of 40 (55%) candidates had high burnout, third highest burnout i.e. 17 out of 40 (42.5%) was found in the specialty categorized as Others having Dermatology, Eye, ENT and Cardiology included in it, followed by Gynecology department's post graduate trainees having fourth highest burnout i.e. 12 out of 40 (30%) and the specialty having least burnout rate turned out to be Pathology where only 7 out of 40 candidates revealed high degree burnout. The research conducted by Mayo Clinic of US in 2014 revealed that the highest degree of burnout was associated with the post graduate trainees of Medicine, followed by Surgery and least with Pathology. This finding is consistent with the results of our research which was conducted in SERVICES Hospital, Lahore. 28 out of 40 post graduate trainees of the Gynecology department of JHL revealed moderate degree of burnout, whereas the post graduates trainees of Gynecology department of Mayo Clinic US revealed low degree of burnout and high level of satisfaction with work-life balance. Hence the burnout in post graduate trainees of JHL is very high as compared to the candidates of research in Mayo Clinic at Gynecology department, the possible reasons for this difference being the



lengthier working hours per day, poor working conditions in JHL and the female gynecologists finding it hard to manage their job along with their household chores.

It should be acknowledged that factors measured in the context of this study can also be the reasons for increased job turnover and wishes to leave the country to avail better opportunities abroad. Men were found to be more prone to these tendencies whereas women due to early marriages and having children were comparatively less aspiring. Such results were consistent with the French and German physicians.

Hence in consideration of these results it is dire need to take prompt actions to reduce burnout on the above mentioned fronts to prevent otherwise inevitable severe consequences.

1. Results of survey in Saxony Germany

2. Burnout during residency training

3. Evaluate the prevalence of burnout and physicians' satisfaction with work-life balance in 2014 compared to a similar sample of physicians in 2011.

With regard to age, burnout in almost all its forms affected more doctors who fell in the 23-29 age group and who were in their early specialization years. These findings were also consistent with the results of research among the medical residents of United States of America with the prevalence rate ranging from 27 to 75 %. However with respect to emotional exhaustion in the post graduates in Services hospital, Lahore, the 30 onward age group was found out to be more prone with 19.1 % as compared to 9.2 % of those below 30. In general a greater burnout among the young post graduates can be attributed to the lack of coping skills with the relatively novel workload and due to the absence of career counseling. Dissatisfaction with the monthly income is also a major contributory factor for high burnout among the younger age group in Services Hospital, Lahore. Our research included 200 post graduate doctors. Out of these 103 were females and 97 male. One worth noting aspect was that males were more prone to depersonalization (tendency to opt for cynicism) than females. This finding was consistent with the research in Saxony, Germany. Emotional exhaustion was also found to be more prevalent among men with 15.5 % with high emotional exhaustion values compared to 7.8% of females. These tendencies reflected that the burnout was generally found to be higher among males than females in general. The plausible reason appearing to be more stress on men being the dependant part of our population.

The next facet that our research comprised of included different specializations and their relative burnout degrees. In Medicine with the exception of

emotional exhaustion which was 5%, they reported to have the greatest burnout with regard to personal achievement and depersonalization of 67.5 % and 100 % respectively. This was due to the greater number of cases reported to the medicine department and the consequent burnout. On the other hand the lowest degree of burnout was seen in Pathology department. Emotional exhaustion was 00.0%, depersonalization 35.0% and personal achievement was 22.5% .This being due to stress-free environment, less number of working hours per day and systematic management of the work place with lower work load.

### CONCLUSION:

Immediate attention needs to be paid to the above mentioned contributory factors in order to improve the mental, physical and emotional status of the doctors so that they can provide their patients with better care without compromising their health and quality of life. Young postgraduates experience high levels of professional burnout due to intense and stressful working conditions this explains the reason behind high burnout in medicine and surgery and low burnout in pathology. Young male doctors due to long working hours and the pressure of supporting their families are more to developing high degree of burnout.

### REFERENCES:

1. Muzafar Y, Khan HH, Ashraf H, Hussain W, Sajid H, Tahir M, Rehman A, Sohail A, Waqas A, Ahmad W. Burnout and its associated factors in medical students of Lahore, Pakistan. 2015 Nov 29 [cited 2016 Apr 26];7(11). Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4689594/>.
2. IsHak WW, Lederer S, Mandili C, Nikraves R, Seligman L, Vasa M, Ogunyemi D, Bernstein CA. Burnout during residency training: A literature review. *Journal of Graduate Medical Education*. 2009 Dec;1(2):236–42.
3. Kaschka WP, Korczak D, Broich K. M E D I C I N E burnout: A fashionable diagnosis. 2011 [cited 2016 Apr 26]. Available from: [http://www.moityca.com/pdfs/Burnout\\_%20Dtsc\\_h\\_Arztebl.pdf](http://www.moityca.com/pdfs/Burnout_%20Dtsc_h_Arztebl.pdf) doi: 10.3238/arztebl.2011.0781.
4. Montero-Marín J, Araya R, Blazquez B, Skapinakis P, Vizcaino V, García-Campayo J. Understanding burnout according to individual differences: Ongoing explanatory power evaluation of two models for measuring burnout types. *BMC Public Health*. 2012;12(1):922.
5. [place unknown]: AMA Wire®. AMA Wire®: Specialties with the highest burnout rates; 2016



- Jan 15 [cited 2016 Apr 26]. Available from: <http://www.ama-assn.org/ama/ama-wire/post/specialties-highest-burnout-rates>.
6. Dyrbye L, West C, Satele D, Boone S, Tan L, Sloan J, Shanafelt T. Burnout among U.S. Medical students, residents, and early career physicians relative to the general U.S. Population. *Academic medicine : journal of the Association of American Medical Colleges*. 2014 Jan 23 [cited 2016 May 4];89(3):443–51. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24448053>.
  7. Drummond D. [place unknown: publisher unknown]. Physician burnout rates top 50% in US; 2016 [cited 2016 May 4]. Available from: <http://www.thehappyemd.com/blog/physician-burnout-rates-top-50-percent-in-usa>.
  8. Mayo Clinic Proceedings. [place unknown]: Elsevier. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014; 2015 Dec 1 [cited 2016 May 4]. Available from: [http://www.mayoclinicproceedings.org/article/S0025-6196\(15\)00716-8/pdf](http://www.mayoclinicproceedings.org/article/S0025-6196(15)00716-8/pdf) doi: 10.1016/j.mayocp.2015.08.023.
  9. Zis P, Anagnostopoulos F, Sykioti P. Burnout in medical residents: A study based on the job demands-resources model. 2014 Oct 30 [cited 2016 May 4];2014. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/articles/PMC4230205/>.
  10. Shanafelt TD, Bradley KA, Wipf JE, Back AL. *Annals of Internal Medicine*. [place unknown]: American College of Physicians. Burnout and self-reported patient care in an internal medicine residency program; 2002 Mar 5 [cited 2016 May 4]. Available from: <http://annals.org/article.aspx?articleid=715151> doi: 10.7326/0003-4819-136-5-200203050-00008.
  11. Markwell A, Wainer Z. The health and wellbeing of junior doctors: Insights from a national survey. *The Medical journal of Australia*. 2009 Oct 20 [cited 2016 May 4];191(8):441–4. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19835538>.
  12. Dyrbye L, Thomas, Massie F, Power D, Eacker A, Harper W, Durning S, Moutier C, Szydlo D, Novotny P, Sloan J, Shanafelt T. Burnout and suicidal ideation among U.S. Medical students. *Annals of internal medicine*. 2008 Sep 4 [cited 2016 May 4];149(5):334–41. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18765703>.
  13. Al-Dubai SAR, Ganasegeran K, Perianayagam W, Rampal KG. Emotional burnout, perceived sources of job stress, professional fulfillment, and engagement among medical residents in Malaysia. 2013 Nov 7 [cited 2016 May 4];2013. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/articles/PMC3842044/>.
  14. Goldhagen BE, Kingsolver K, Stinnett SS, Rosdahl JA. Stress and burnout in residents: Impact of mindfulness-based resilience training. 2015 Aug 25 [cited 2016 May 4];6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/articles/PMC4554415/>.
  15. Khanna R. Is medicine turning into unhappy profession? 2013 [cited 2016 May 4];17(1). Available from: <http://www.ncbi.nlm.nih.gov/pubmed/articles/PMC377284/>.
  16. Németh A. [Burnout among doctors and its correlations with health, life satisfaction and sleep]. *Orvosi hetilap*. 2016 Apr 12 [cited 2016 May 4];157(16):623–30. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27063430>.
  17. Park C, Lee Y, Hong M, Jung C, Synn Y, Kwack Y, Ryu J, Park T, Lee S, Bahn G. A Multicenter study investigating empathy and burnout characteristics in medical residents with various specialties. *Journal of Korean medical science*. 2016 Apr 7 [cited 2016 May 4];31(4):590–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27051244>.
  18. Elmariah H, Thomas S, Boggan J, Zaas A, Bae J. The burden of burnout: An assessment of burnout among internal medicine residents after the 2011 duty hour changes. *American journal of medical quality : the official journal of the American College of Medical Quality*. 2016 Feb 27 [cited 2016 May 4]. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26917807>.
  19. Terrones-Rodríguez J, Cisneros-Pérez V, Arreola-Rocha J. [Burnout syndrome in medical residents at the general hospital of Durango, México]. *Revista médica del Instituto Mexicano del Seguro Social*. 2016 Mar 10 [cited 2016 May 4];54(2):242–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26960053>.