Burnout

Burnout is a psychological syndrome resulting from a prolonged response to chronic interpersonal stressors, usually on the job. Before this term was taken up by psychologists, people used the term to describe an experience of chronic stress depleting ones coping resources. In 1974, Freudenberger observed the phenomenon of gradual emotional depletion, loss of motivation, and reduced commitment among volunteers of the St Mark's Free Clinic in New York's East Village and borrowed this term to define phenomenon. Maslach and her colleagues were the first to develop a multidimensional construct to study burnout and argued that burnout is more than mere exhaustion. Initially, burnout was thought to be limited to the workers who were involved in the human services sector. However, soon it became apparent that burnout occurs in all workers, from those working in client services to those whose work requires creativity, problem-solving, or mentoring. Importantly, burnout is included in the ICD-10 diagnostic system (code Z73.0) and is placed in the category "problems related to life management difficulty" and described as "a state of vital exhaustion", without further elaboration.

Researchers have ascribed several causes to the increase in burnout among healthcare providers. Of note, these causal assumptions are based on limited data mostly from cross-sectional studies. However, this limitation of data has not stopped researchers from declaring cause and effect relationship. For example, Schaufeli wrote in 2009

> *"The "cultural revolution" of the 1960s weakened the professional authority of – among others – doctors, nurses, teachers, social workers and police officers. The traditional prestige of these professionals was no longer evident after the 1960s. Simultaneously, empowered recipients expected much more than ever before. As a consequence, recipients' demands of care, service, empathy, and compassion intensified. Together, these two trends increased the technical and emotional demands of professional work considerably. Even if they relinquished professional ideals, embracing the values of institutionalized services, service providers were*

> *unlikely to experience fulfillment from their work. From the perspective of social exchange, a discrepancy grew between professionals' efforts and the rewards they received in recognition and gratitude. This "lack of reciprocity" is known to foster burnout. "*

While for most readers, the concept of burnout might appear simple, its actual construct is still under much debate. Questions, such as, "is burnout related to work only?" or "does burnout consists of mere exhaustion or it has other dimensions?" are still being debated. There is also controversy about how to measure burnout. The oldest, and the most studied tool to measure burnout is Maslach Burnout Inventory (MBI) which considers burnout to consist of three dimensions; emotional exhaustion, depersonalization (cynical attitude towards people one is working with) and reduced personal achievement. Another burnout instrument, Burnout Measures (BM) assumes burnout to be one-dimensional consisting of exhaustion only, although it includes mental, physical, and emotional components of exhaustion. In addition, BM emphasizes that burnout can occur in occupational and non-occupational settings (such as love marriage, political activism, etc.) if there is a long-term involvement in any emotionally demanding situation.

Over time, the multidimensional construct of burnout has established itself although there is an ongoing debate about whether burnout is a two-dimensional or three-dimensional construct. Several researchers argue that reduced professional achievement is not specifically a component of burnout and hence should be excluded. Empirical, theoretical, clinical, and psychometric evidence suggests that professional efficacy may not play an important role as the third dimension of burnout. Further, MBI includes only negatively phrased items which may lead to answering bias; participants simply answer questions mechanically expecting a pattern. Oldenburg Burnout Inventory (OBI) was developed to address these two shortcomings of the MBI and include two well-accepted dimensions of burnout and includes positively and negatively phrased questions throughout the questionnaire. Therefore, we used OBI to assess burnout among the healthcare workers of the University of Tennessee at Chattanooga College of Medicine and Erlanger Health System.

2018 Burnout Survey

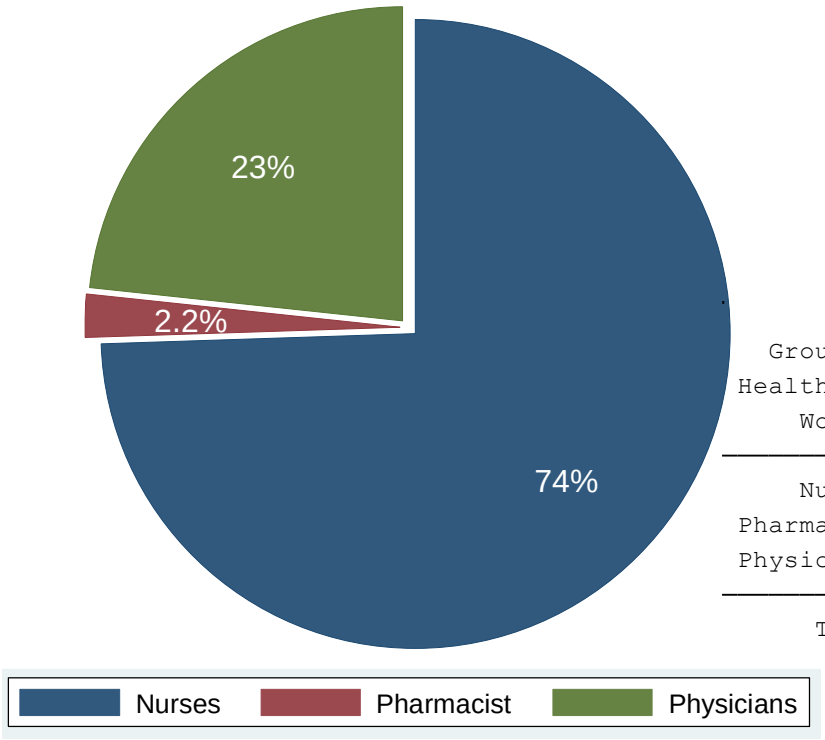
The survey was emailed in January and reminder emails were sent during the following 6 weeks. The survey was closed after 10 weeks. The survey consisted of some demographic questions, a genetic job satisfaction question, Oldenburg Burnout Inventory, and Utrecht Work Engagement Scale. Below are data on the survey response rate, some of the demographic profile of the participants, and burnout details; first as a whole and then by groups.

The survey was sent to 3664 healthcare workers within the University of Tennessee at Chattanooga College of Medicine and Erlanger Health System. Of these, 878 surveys were sent to attending physicians including faculty, 186 were sent to residents and fellows, 2545 were sent to nurses, and 55 were sent to pharmacists. The survey was completed by 1,136 participants with a survey response rate of 31%. The table below gives additional details on survey response rates by healthcare workers.

	Sent	Completed	Response Rate (%)
Physicians	1064	265	24.9
Attending Physicians	878	190	21.6
Residents & Fellows	186	74	39.8
Nurses	2545	846	33.2
Staff Nurse		723	
Nurse Manager		32	
Nurse Leaders		83	
Pharmacists	55	25	45.4
TOTAL	**3664**	**1136**	**31.0**

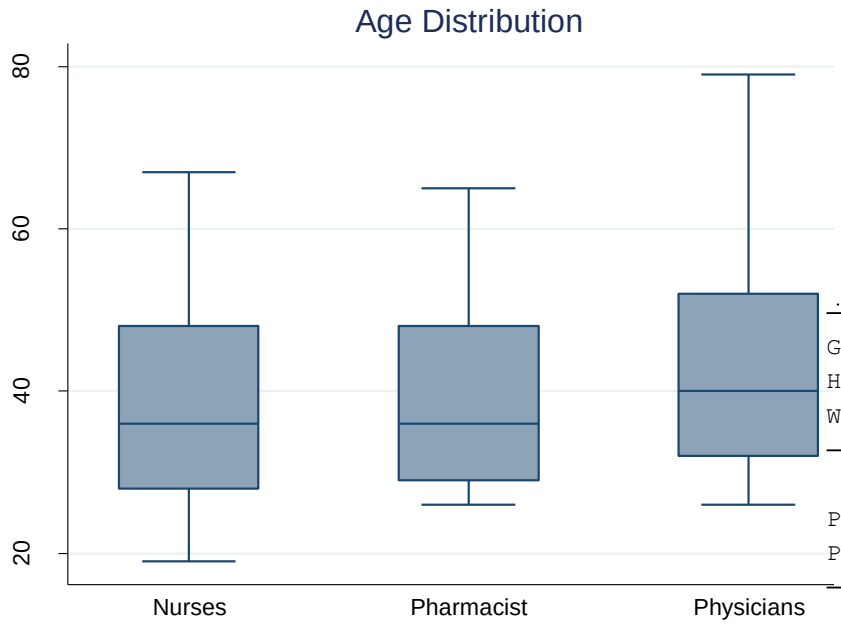
One physician did not specify resident or fellow status
Denominators for subcategories of Nurses were not available

Most respondents were nurses; this was due to a large number of nurses who were emailed the survey (2545) as compared to physicians or pharmacists. Below is the pie chart of the breakdown of three groups of the respondents.



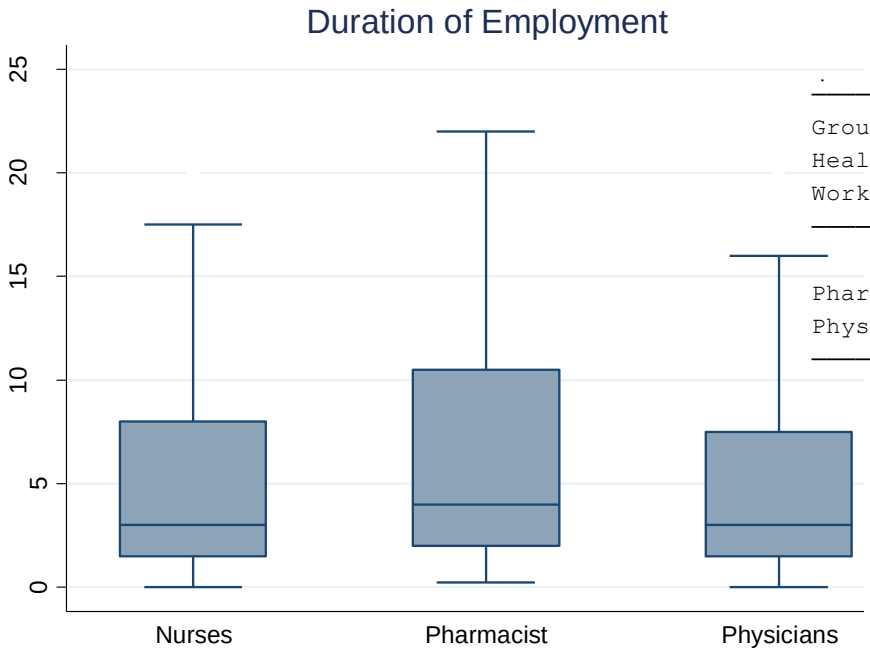
Group of Healthcare Worker	Freq.	Percent
Nurses	846	74.47
Pharmacist	25	2.20
Physicians	265	23.33
Total	1,136	100.00

Below is the age distribution of the whole respondent cohort by the groups



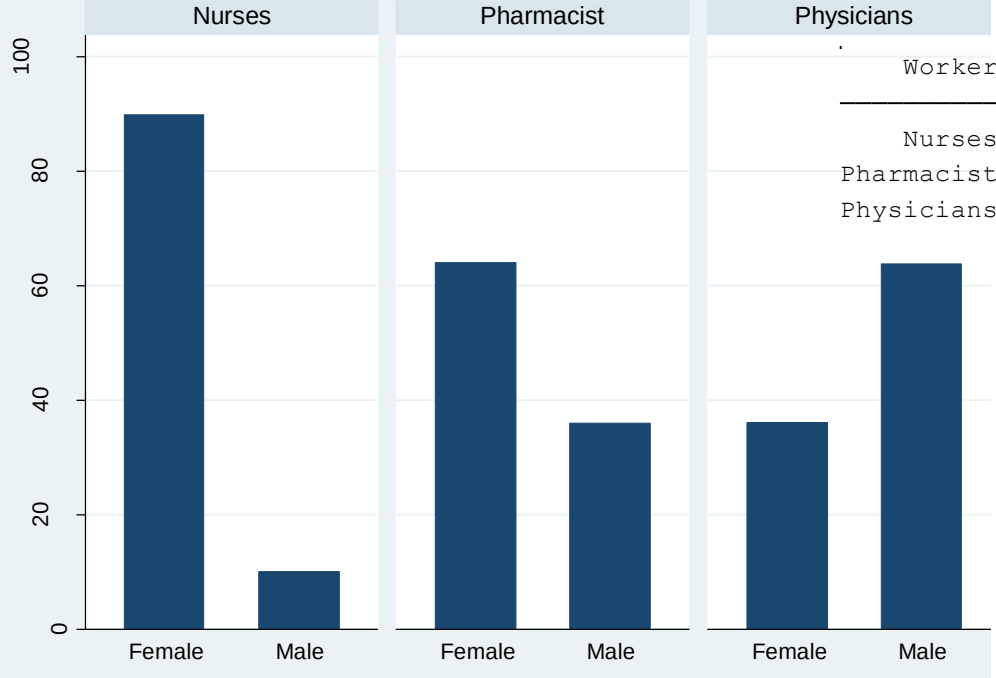
Group of Healthcare Worker	mean(Age)	sd(Age)
Nurses	38.282368	12.03823
Pharmacist	38.919998	11.8354
Physicians	42.675999	12.73813

Below is boxplot of the duration of employment of respondents by groups



Group of Healthcare Worker	mean(Q9)	sd(Q9)
Nurses	7.5965704	8.623772
Pharmacist	6.59	6.863581
Physicians	8.1940239	9.894334

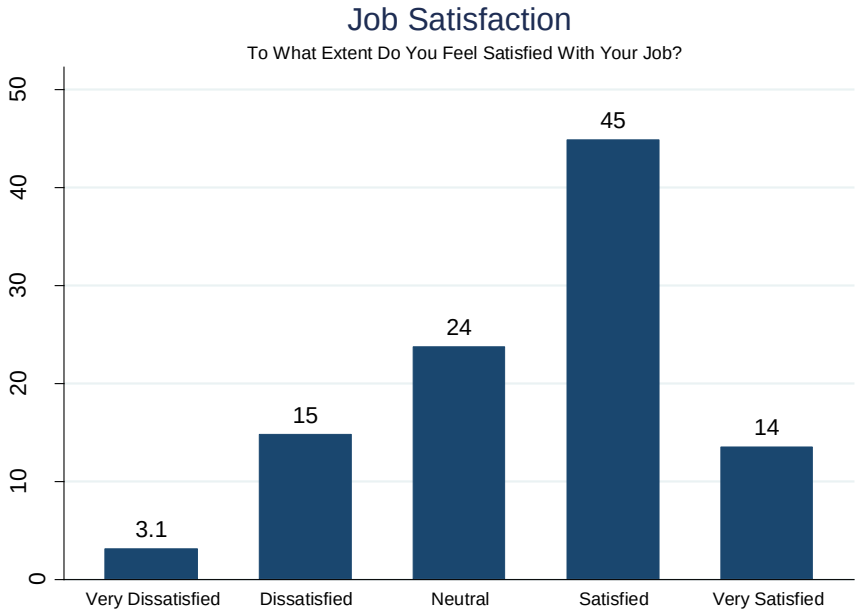
The respondents were overwhelmingly females; 866 out of 1136 (76.8%). Below are the percentage of each gender by the group.

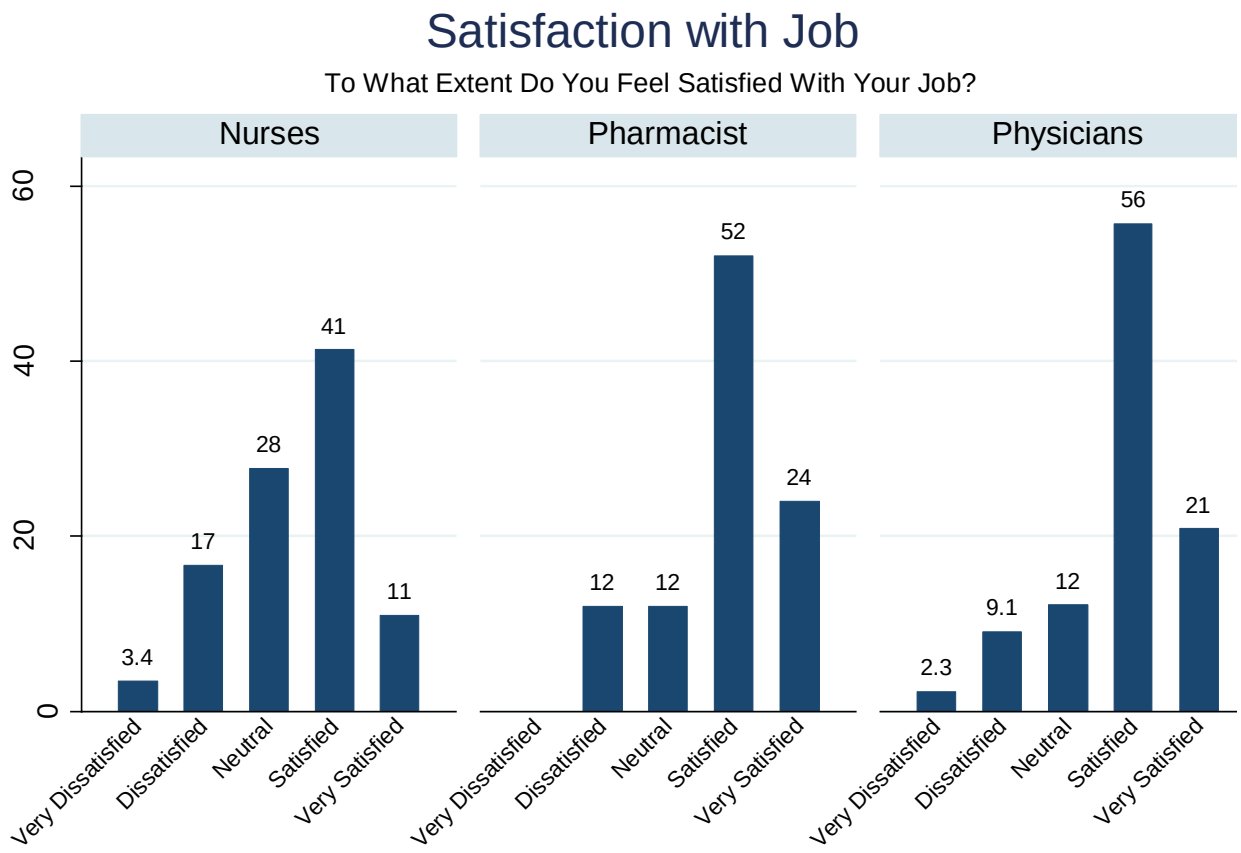


Worker	Female	Male
Nurses	755	85
Pharmacist	16	9
Physicians	95	168

We also asked a generic question about the job satisfaction from participants. Participants could choose one of the five possible options. Of all the respondents, 59%

were satisfied or very satisfied with their job. However, 18.1% were either dissatisfied or very dissatisfied with their job. Below is the graphic representation of the results for the whole cohort followed by job satisfaction by groups

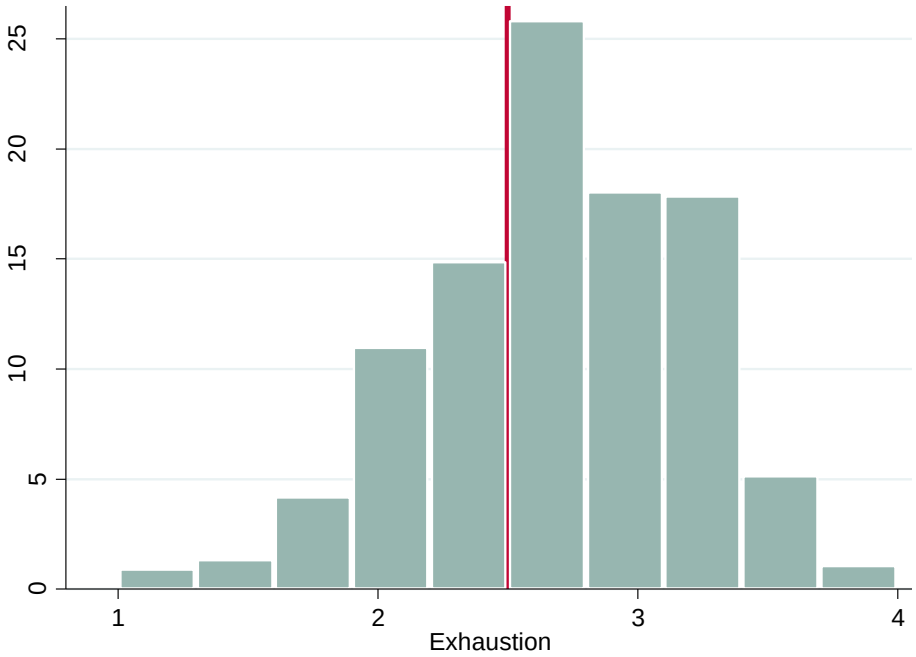




Oldenburg Burnout Inventory (OBI) assesses the two core dimensions of burnout, namely Exhaustion and Disengagement from work.

Exhaustion is defined as a consequence of intense physical, affective, and cognitive strain due to persistent exposure to job demands. Thus, this definition of Exhaustion includes not just the emotional exhaustion but other dimensions of exhaustion as well.

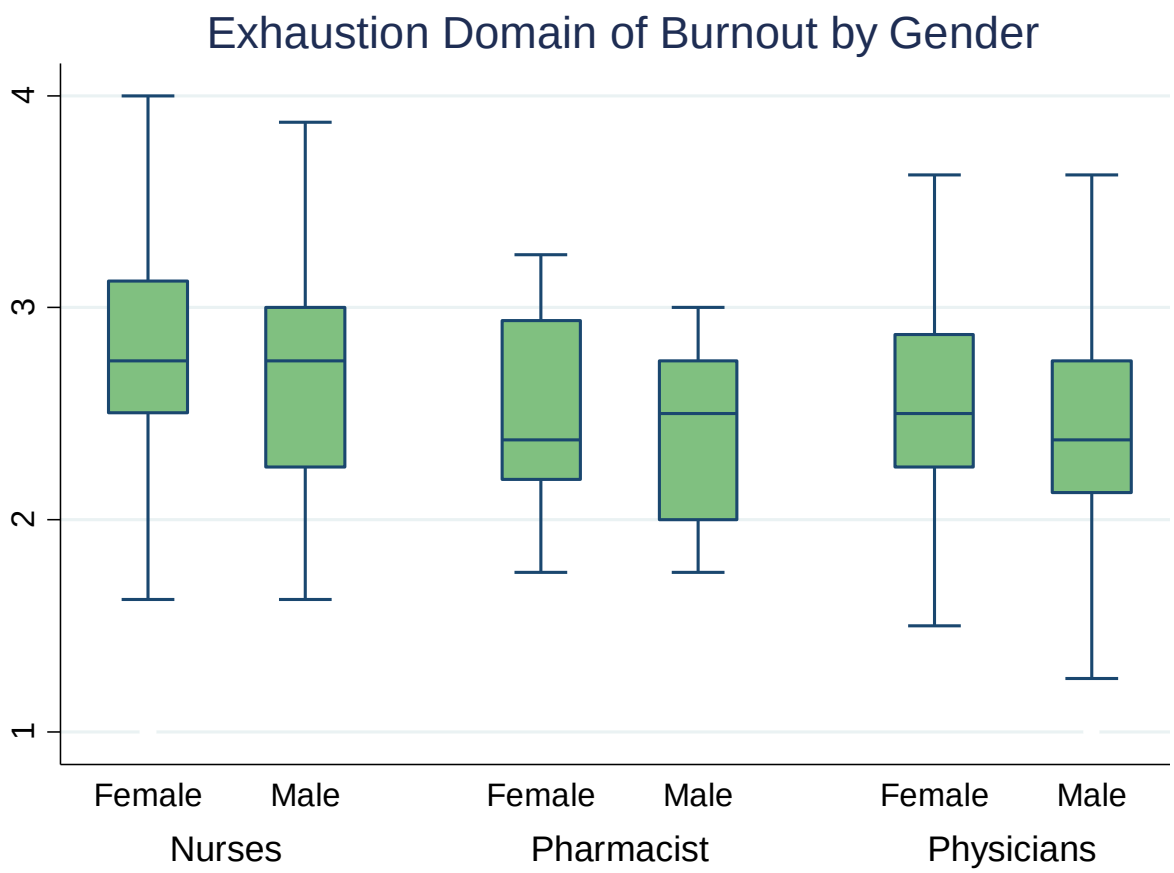
The graph below shows scores of all respondents on the Exhaustion domain. The lowest possible score on this scale is 1 which is consistent with no burnout on Exhaustion domain. The highest possible score is 4, which is consistent with extreme burnout. The red line, at 2.5, shows the average level of Exhaustion in healthcare workers. It is clear that a significant percentage of respondents were feeling Exhaustion (emotional, physical, or cognitive).



The mean Exhaustion score was 2.68 with standard deviation of 0.51 (median = 2.75 and interquartile range = 0.62). Overall, 60% of respondents expressed Exhaustion above the general healthcare workers mean.

Females had significantly higher levels of Exhaustion than males. In females, Exhaustion was 2.73 while in males it was 2.49 (P-value < 0.0001).

Below are the scores on the Exhaustion domain by the group and gender

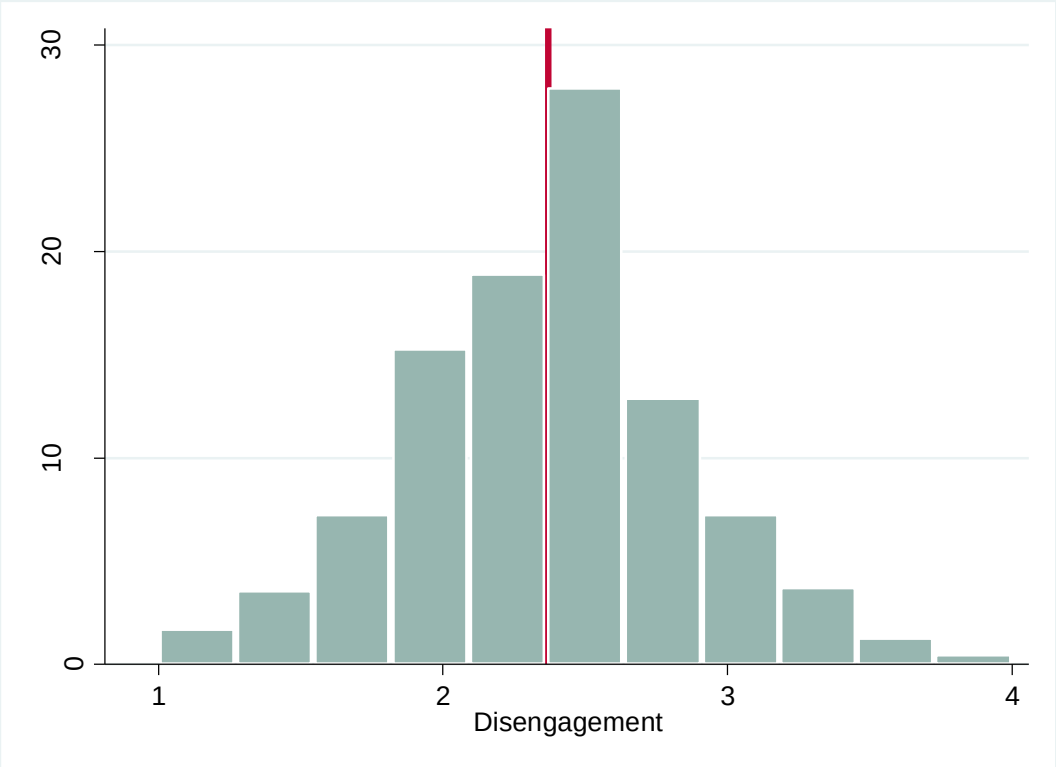


Nurses, as a group, had a higher level of Exhaustion (2.75) than pharmacists (2.50) or physicians (2.45); both p-values < 0.0001. There was no difference between pharmacists and physicians in Exhaustion (p-value =0.62). Interestingly, there was no difference between males and females within the groups.

The healthcare worker scores were obtained from the following reference: Demerouti E, Bakker AB. The Oldenburg Burnout Inventory: A good alternative to measure burnout and engagement. Handbook of stress and burnout in health care. Hauppauge, NY: Nova Science. 2008.

The ***Disengagement*** domain of the OBI measures the relationship between employees and their jobs particularly worker's identification with the work willingness to continue working in the same occupation. Disengaged employees have negative attitudes towards their work.

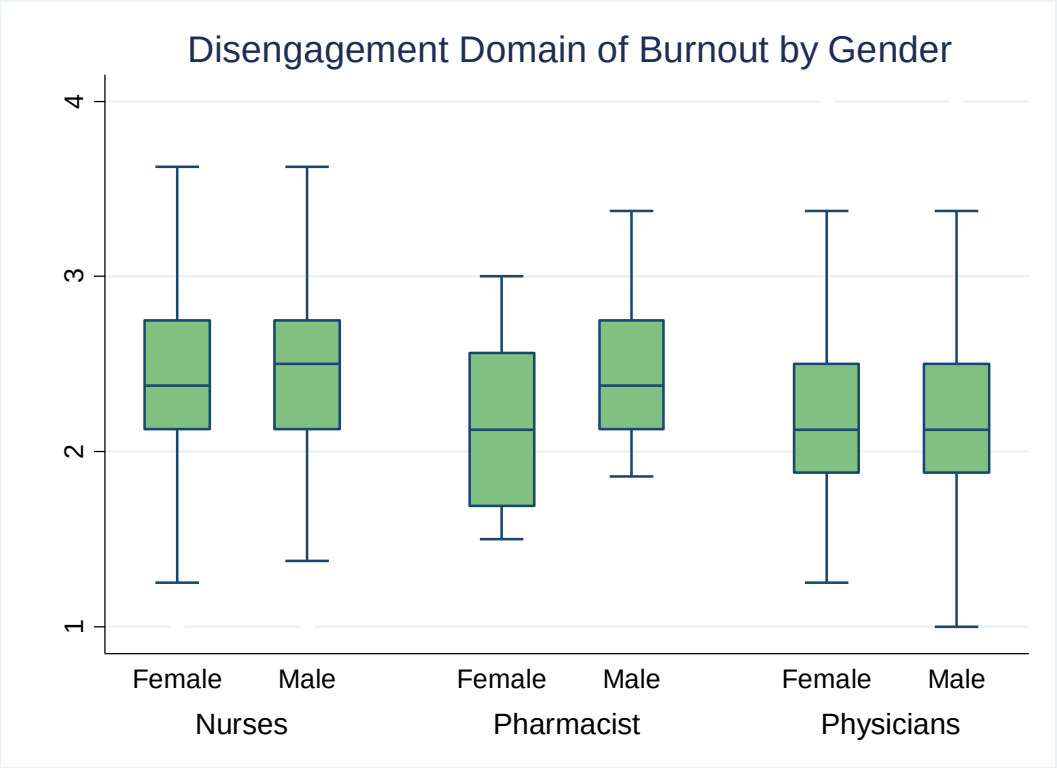
The Disengagement score, like Exhaustion score, also ranges from 1 to 4 with 1 consistent with no Disengagement and 4 consistent with extreme disengagement. The graph below shows the distribution of the Disengagement score among respondents. The average healthcare worker disengagement is 2.38, represented by the red vertical line in the graph below. From the figure below, 53.7% of the respondents had disengagement above the average for healthcare workers.



The mean Disengagement score was 2.36 with standard deviation of 0.49 (median = 2.38 and interquartile range = 0.75).

Females had slightly higher levels of Disengagement than males. In females, Disengagement was 2.38 while in males it was 2.31 (P-value=0.04).

Below are the scores on the Disengagement domain by the group and gender

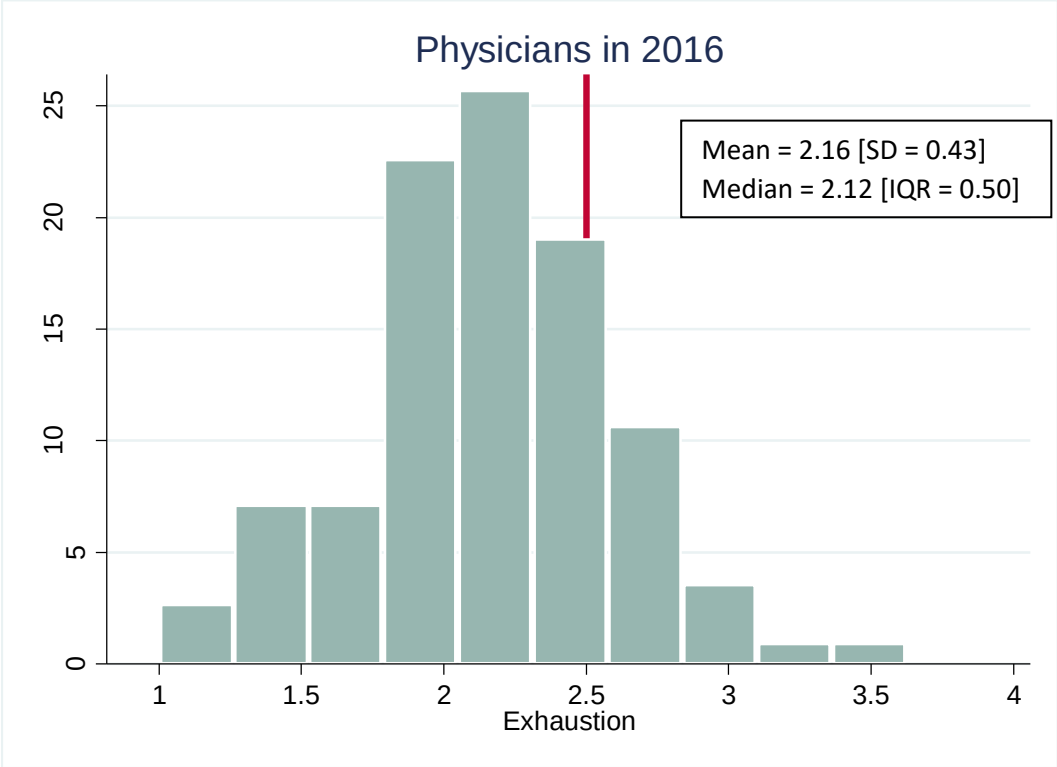


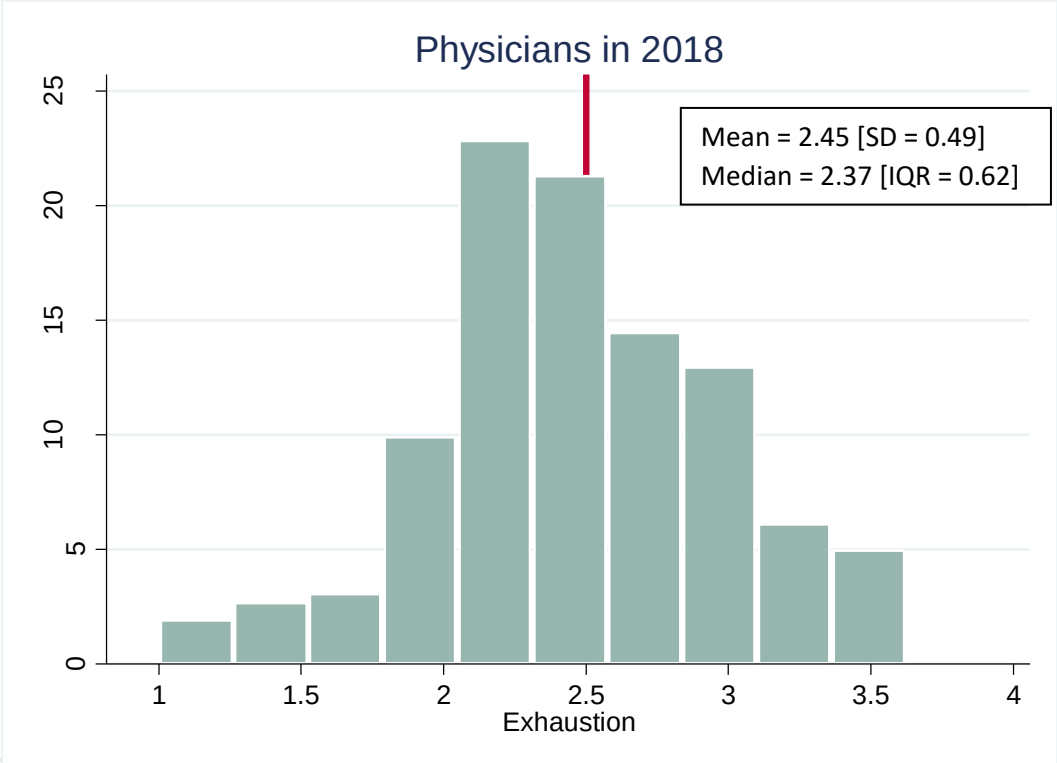
Nurses, as a group, had a higher level of Disengagement (2.41) than physicians (2.23); p-values < 0.0001. There was no difference between pharmacists and physicians or between pharmacists and nurses in Disengagement (p-value =0.81 and 0.10 respectively). Interestingly, there was no difference between males and females within the three groups.

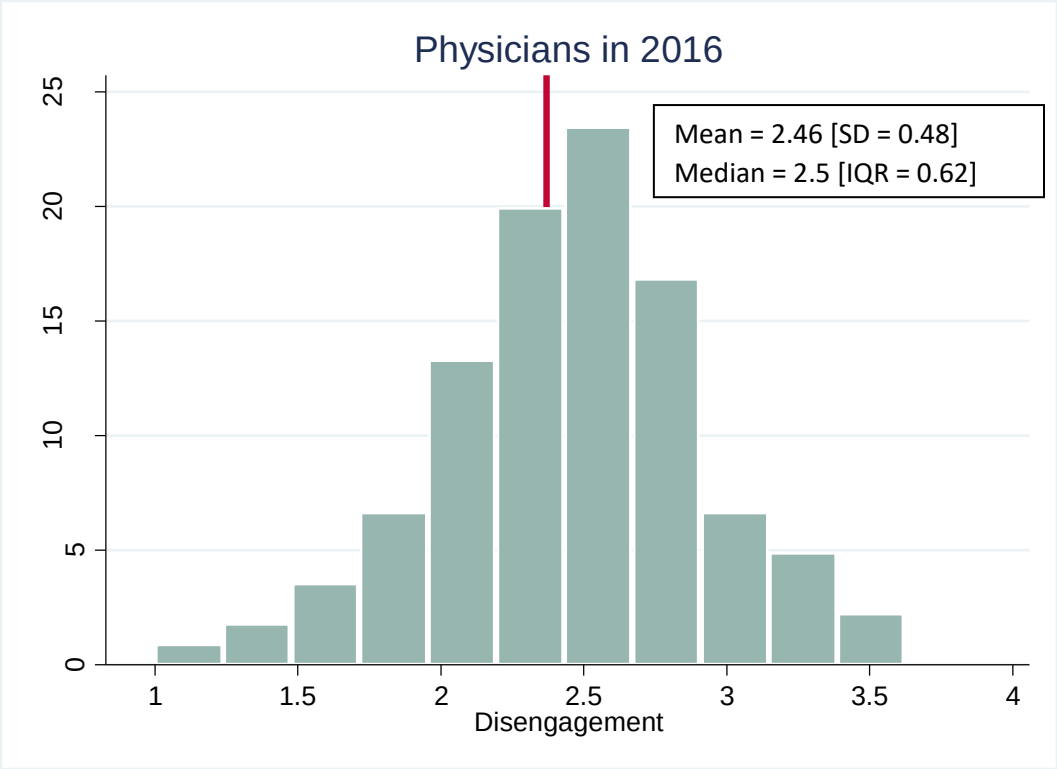
The healthcare worker scores were obtained from the following reference: Demerouti E, Bakker AB. The Oldenburg Burnout Inventory: A good alternative to measure burnout and engagement. Handbook of stress and burnout in health care. Hauppauge, NY: Nova Science. 2008.

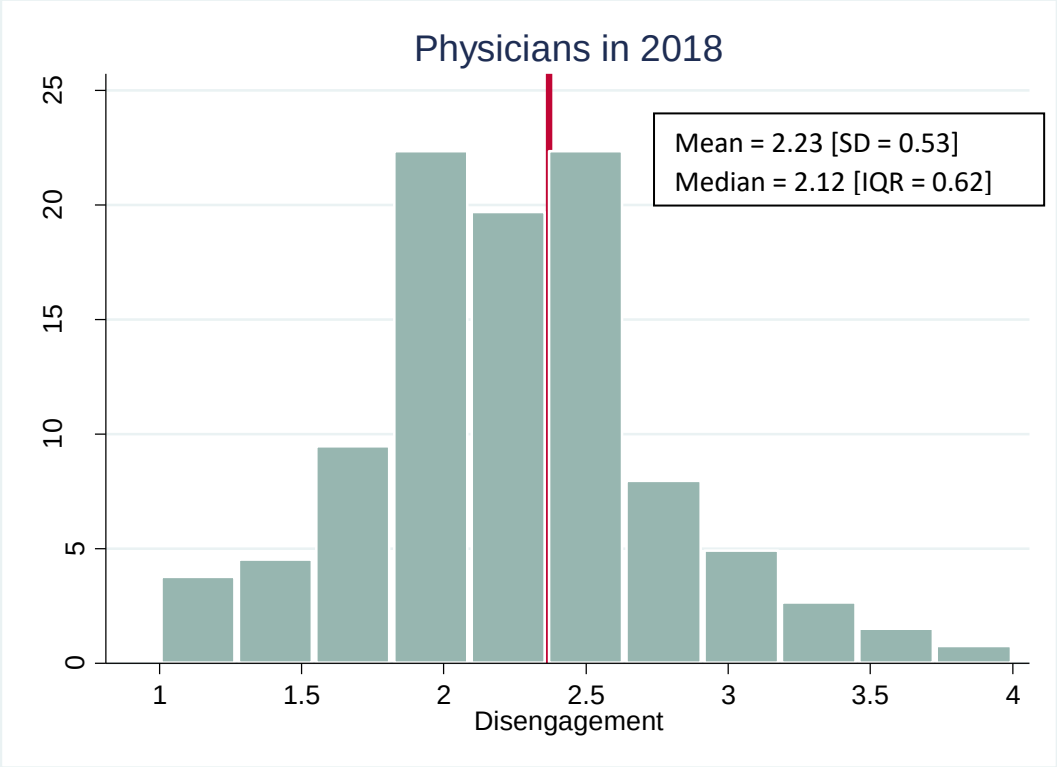
Comparison with 2016 Results

In 2016, data were collected for physicians only. Hence, the comparison below is for physicians. The Exhaustion scores significantly increased from 2016 to 2018 (0.29; 95%CI = 0.21 to 0.37; P<0.0001)

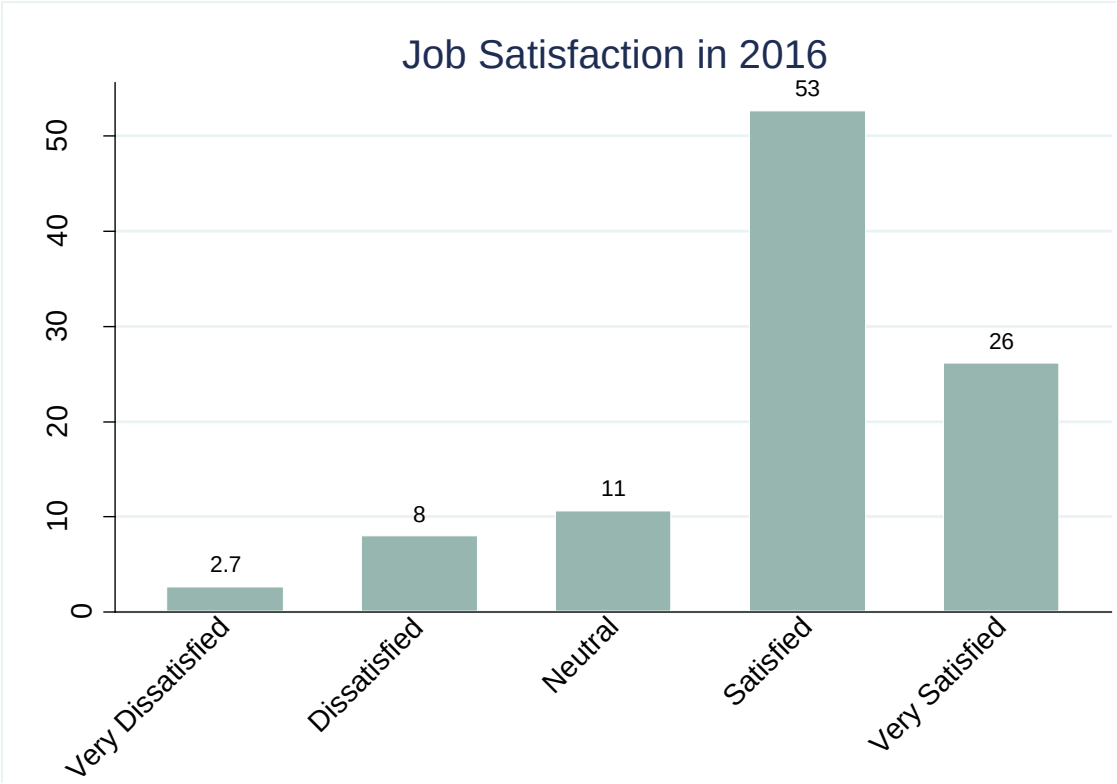


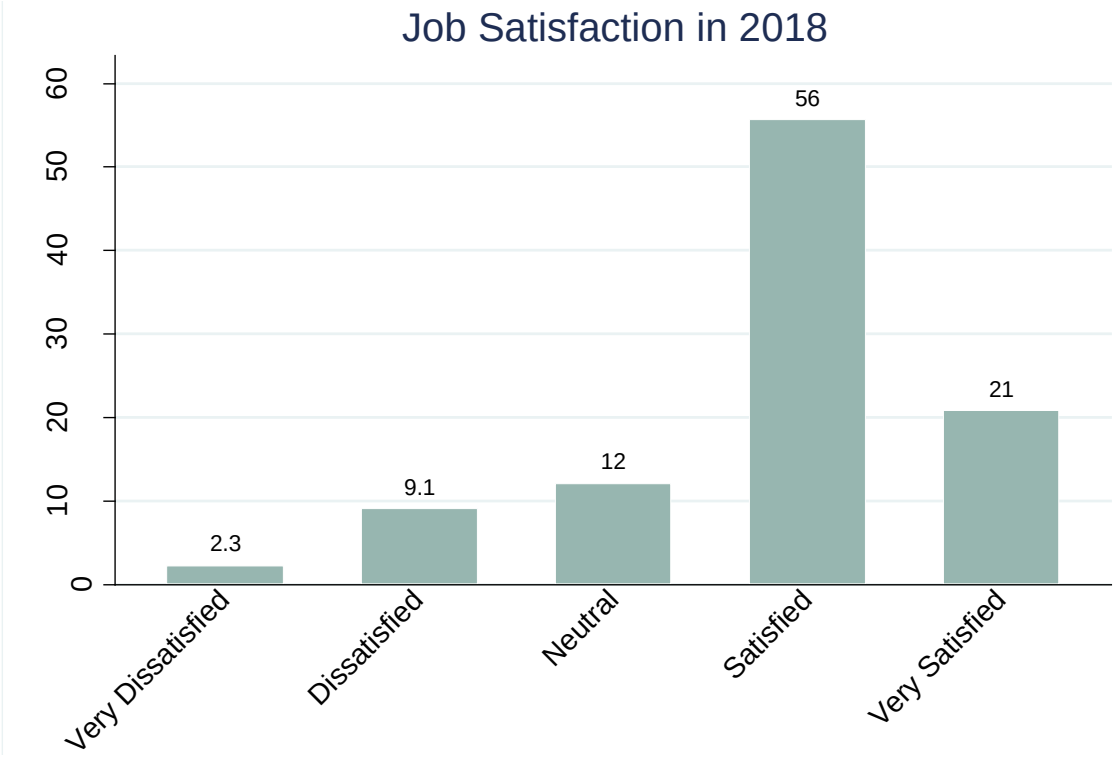






The difference in Disengagement domain between was two years was significant (0.23; 95%CI = 0.14 to 0.32; P<0.0001)

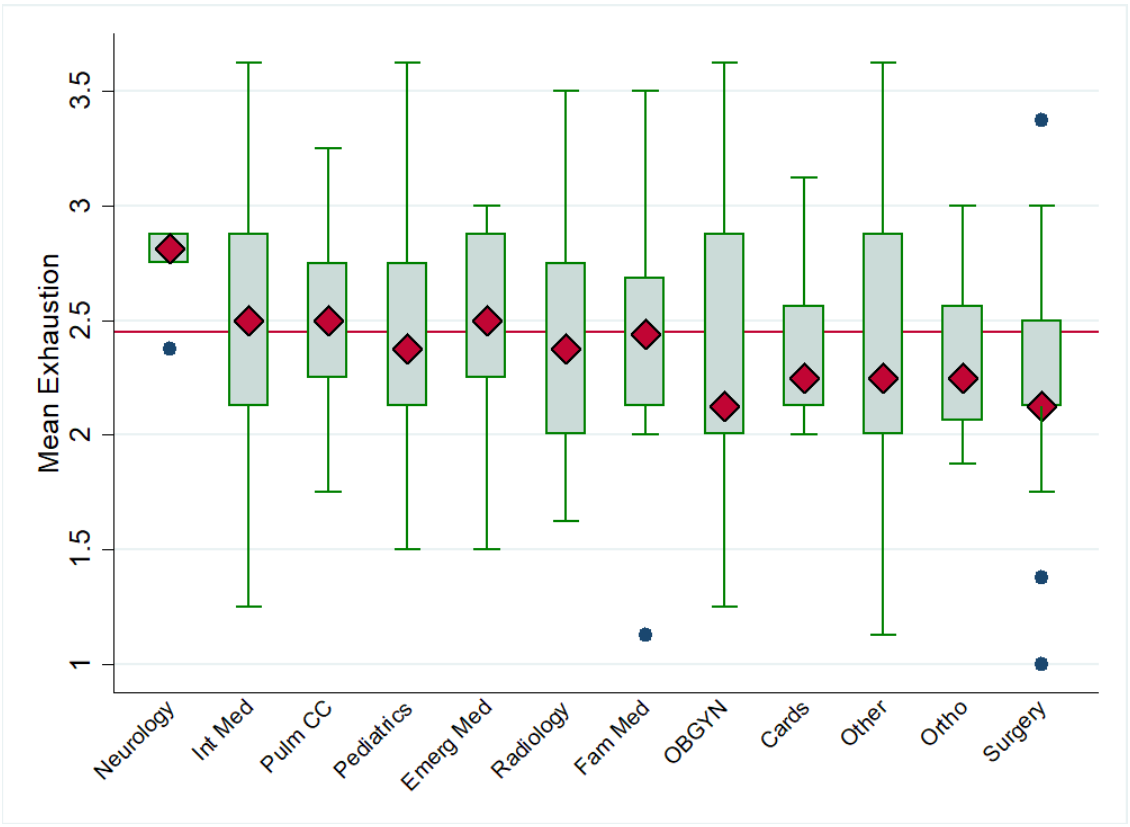

Job Satisfaction in 2016
0
10
20
30
40
50
2.7
8
11
53
26
Very Dissatisfied
Dissatisfied
Neutral
Satisfied
Very Satisfied

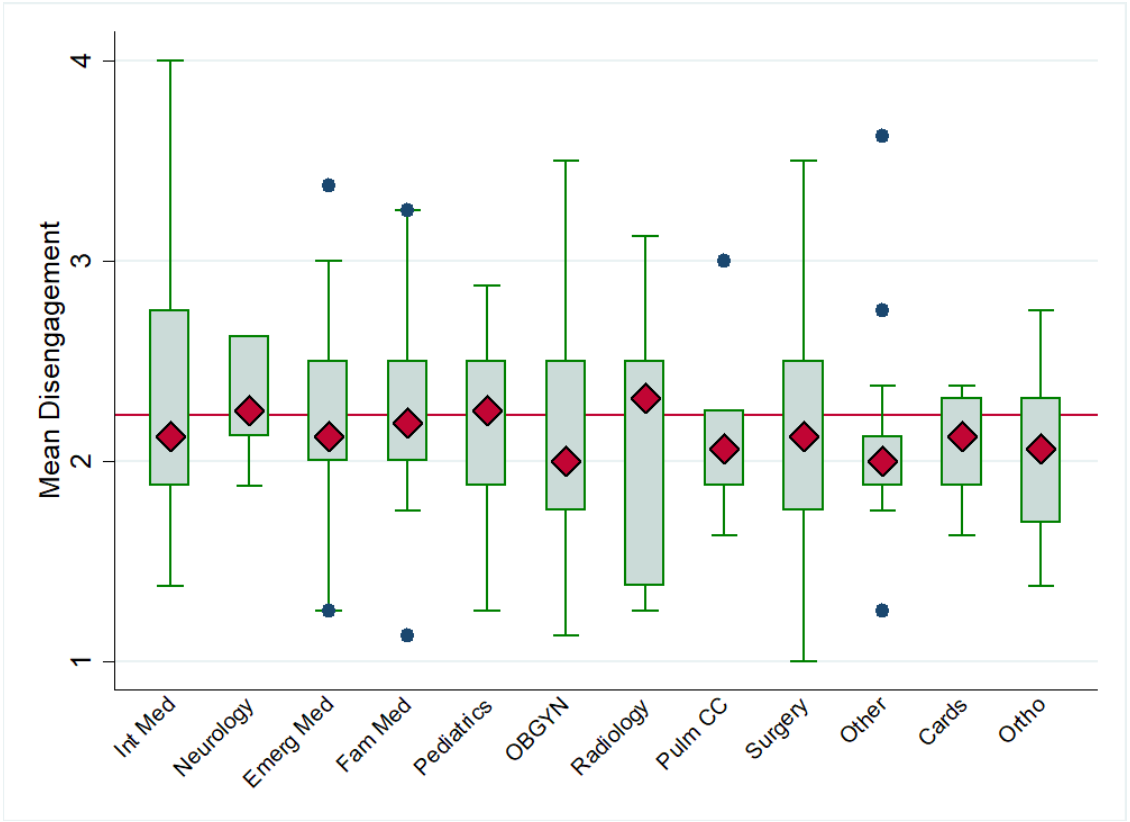

Job Satisfaction in 2018
0
10
20
30
40
50
60
2.3
9.1
12
56
21
Very Dissatisfied
Dissatisfied
Neutral
Satisfied
Very Satisfied

Burnout by Specialty (2018 Results): We also examined the extent of burnout domains by specialty. To have reasonable estimates, specialties with less than 6 responses were counted with their closest group. For example, gastroenterology and hematology were included in internal medicine while vascular surgery and urology were included in the surgery category. Those specialties for which there was no clear-cut grouping, such as pathology or psychiatry, we included them in the 'Other' category. First, there is table followed by figures on the next page. The placement of specialty in the figures on the x-axis is based on the mean score from high scores to low scores. The red diamond represents median (and not mean) for that category. The red horizontal line represent the means of all physicians for 2018.

Specialty	**Exhaustion**	**Disengagement**
Cardiology	2.38	2.08
Emergency Medicine	2.46	2.29
Family Medicine	2.41	2.21
Internal Medicine	2.58	2.35
Neurology	2.75	2.29
OBGYN	2.39	2.18
Orthopedic Surgery	2.33	2.03
Other	2.35	2.13
Pediatrics	2.47	2.18
Pulmonary and Critical Care	2.50	2.15
Radiology	2.44	2.15
Surgery	2.26	2.13

Table: *Mean exhaustion and disengagement by specialty in the 2018 survey. Of note: mean exhaustion in the whole physician sample was 2.45 and mean disengagement was 2.23*


Mean Exhaustion
1
1.5
2
2.5
3
3.5
Neurology
Int Med
Pulm CC
Pediatrics
Emerg Med
Radiology
Fam Med
OBGYN
Cards
Other
Ortho
Surgery


Mean Disengagement
1
2
3
4
Int Med
Neurology
Emerg Med
Fam Med
Pediatrics
OBGYN
Radiology
Pulm CC
Surgery
Other
Cards
Ortho