Editorial

Burnout in Radiology: Overview and Possible Solutions

In this series of short editorials, we discuss 3 major challenges that our specialty of Radiology faces today. These are: burnout, dissatisfaction, and inequality and although they will be addressed separately, each of them influences and magnifies the others. In this first installment, we discuss burnout. Although the data presented here pertains to the USA, we believe that burnout is a universal problem and is present in every country.

In many developed countries including the USA, the physician workforce is at equilibrium between retirements and the number of physicians finishing medical school. In the USA, it has been calculated that 200,000 new physicians will be needed by 2020 which would translate into opening 400 new medical schools (this will not happen) (1). With respect to Radiology, it has been estimated that by 2025 we will need 20% more radiologists. In a recent article published in Radiology, it was shown that from 1995-2011 the percentage of radiologists with respect to the total physician workforce in the USA decreased by nearly 10% with only 3 states showing growth in the number of radiologists (2). The low number of radiologists is more acute in relatively rural and isolated states such as Alaska and Maine, something that is seen in other countries too. The problem is further complicated by the fact that the number of graduating radiologists has remained stable for many years and that many residency programs are thinking about reducing their size due to financial constraints and future payment methods. The number of imaging studies performed continues to grow and the quantity of individual images obtained for each study (especially MRI), also keeps growing. By the end of the decade, American radiologists will have to interpret an image every second, 24 hours a day for 365 days per year to be able to cope with growing number of studies ordered. From a practical standpoint, this is impossible and we would like to offer "machine learning diagnosis" as a possible solution. Currently most radiologists fear artificial intelligence taking over our jobs but the future is inevitable and computers will play an increasing role in image interpretation. If used correctly however, artificial intelligence will free us from interpreting many studies, especially normal ones, and will allow us to transition from our current jobs as "readers or interpreters" of studies to "consultants." Without more radiologists and/or artificial intelligence, we will be working harder, longer hours for similar or lesser salaries and this will result in even more burnout sensation.

The burnout syndrome is defined as emotional exhaustion, depersonalization and a loss of perspective that our daily work is meaningful. Burnout is something that occurs across all professions and in medicine starts very early. In a recent study performed at the University of North Carolina, questionnaires regarding burnout were mailed to over 1000 residents and responses were collected from over 500 of them (3). It was surprising to discover that Radiology ranked as the second specialty, only behind General Surgery, with the highest number of resident burnout. 82% of Radiology residents said to feel burnout. When asked why they felt this was the most common reasons given were lack of time to take care of themselves, lack of time to exercise and inability to have time to enjoy activities outside of the hospital. Not surprising, women also reported that conflicting responsibilities between home, child care, and work contribute significantly to burnout. Moreover, to further complicate the issue, 17% of residents reported to consider themselves clinically depressed. The Mayo Clinical survey on physician burnout sampled over 39,000 doctors in different specialties and found a burnout rate of 55% with Radiology among the 5 specialties with the highest burnout (4). Again, females reported higher frustration and fatigue and the most common cited reason was a lack of work-life integration. Over 40% of studied physicians considered themselves depressed and 6.5% reported suicidal ideations. In a different article, US physicians were found to have higher burnout rate when compared to the rest of the population (5). The American College of Radiology studied personality traits which contribute to burnout and these were: perfectionism, indecisiveness, harshly self-critical, very empathetic, inflexible and idealistic (6).

The fact that physician burnout is very high has

been noticed by many authorities. Dr. Vivek Murphy, a previous US Surgeon General stated that "if physicians are not happy, they cannot heal others" (7). Most US medical schools now include "improving the physician's work life and preventing burnout" in their aims. At the University of North Carolina, the department of Psychiatry started the "take care of your own program" formed by a group of physicians whose goal is to help others cope with burnout. The Mayo Clinic has designed the online Well-Being Index, a program which allows individuals to track feelings such are fatigue, depression, substance abuse and emotional concerns among others to find patterns of behavior that may be changed in the future and prevent burnout (8).

To finish this first editorial, we would like to offer some solutions to the issue of burnout:

- Maintain our personal health by having time outside of work to exercise, eat well, and rest. One must make a conscious decision to stop working at the end of the day (something that is very difficult when one is connected constantly to the internet), understand that rest is not just the absence of work, and that being too busy is not an honor. Sleep is not optional as 99% of us need 7-9 hours of it to function well the next day. The number of errors made correlates with amount of sleep and working 19 hours non-stop is equivalent to working under the influence of alcohol. Flexible and part-time schedules will help both male and female physicians distribute work related to family more fairly. Our medical students are not trained to avoid burnout and our Radiology residents must receive prompt and sympathetic counselling when feeling this way.
- Maintaining the health of our profession by understanding that what we do is extremely valuable to our patients and colleagues, learning to say "no" to added responsibilities, staying calm and help colleagues who show disruptive and destructive behaviors and finally learning to survive adverse legal issues such as malpractice suits. In addition, trying to "live with less" will free up money to hire more radiologists and distribute our work more evenly thus assuring employment for younger radiologists in the future

References

1. Berman S. A health care debate: Do we really need more doctors? [internet]. S. f. [citado: 2017 sep. 6]. Disponible en: https://www.ucf.edu/pegasus/health-care-debate-do-we-really-need-more-doctors.
2. Rosenkrantz AB, Hughes DR, Duszak R. The US radiologist workforce: an analysis of temporal and geographic variation by using large national datasets. Radiology 2016;279:175-84.
3. Anderson P. Medical resident Burnout reaches epidemic levels [internet]. 2015 [citado: 2017 sep. 6]. Disponible en: http://www.medscape.com/viewarticle/844821.
4. Shanafelt TD, Hasan K, Dyrbye LN, Sinsky C, Satele D, Sloan J, West CP. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. Mayo Clin Proc. 2015;90:1600-13.
5. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W. Satele D, West CP, Sloan J, Oreskovich MR. Burnout and satisfaction with work-life balance among US physicians related to the general US population. Arch Intern Med. 2012;172:1377-85.
6. Harolds JA, Parikh JR, Bluth EI, Dutton SC, Recht MP. Burnout of radiologists: frequency, risk factors, and remedies: a report of the ACR commission on human resources. J Am Coll Radiol. 2016;13:411-6.
7. Frieden J. Surgeon general concerned about physician Burnout [internet]. 2016 [citado: 2017 sep. 6]. Disponible en: http://www.medpagetoday.com/PublicHealthPolicy/GeneralProfessionalIssues/57280.
8. Physician Well-Being Index [internet]. S. f. [citado: 2017 sep. 6]. Disponible en: https://www.mededwebs.com/physician-well-being-index.

Mauricio Castillo, Guest editor
Neuroradiologist Professor and Head of
Neuroradiology University of North Carolina
Chapel Hill, Estados Unidos