

Gender Differences in Publication Productivity, Academic Position and Career Duration Among Current Academic Radiation Oncology Faculty

Emma B. Holliday¹, Clifton. D. Fuller¹, Reshma Jagsi², Lynn Wilson³, Mehee Choi⁴, Charles R. Thomas Jr⁵.

¹The University of Texas MD Anderson Cancer Center, Houston, TX, ²The University of Michigan, Ann Arbor, MI, ³Yale University School of Medicine, New Haven, CT, ⁴Northwestern University Feinberg School of Medicine, Chicago, IL, ⁵Oregon Health Science Center Knight Cancer Institute, Portland, OR

Introduction:

In medical schools across the U.S., women continue to be under-represented among faculty in the ranks of full professor (19%) and chair (13%) (AAMC). Prior studies have shown women are likewise under-represented among authorship in medical literature at large (Jagsi 2006). Other studies have showed differences in career trajectories and even salaries (Jagsi 2011 and 2012). Radiation oncology is no exception. There has been a recent interest in the development and evaluation of objective measures of academic productivity. One such measure is the h-index. The h-index includes the number of papers (Np) published greater than or equal to *h* times (Hirsch 2005).

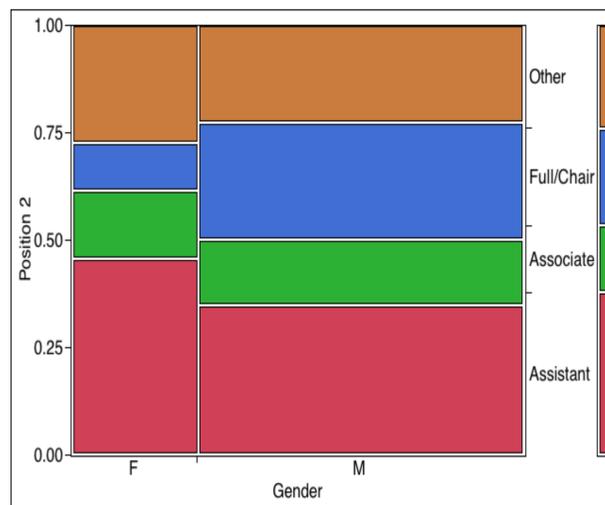
Purpose/Objective(s):

Radiation oncology departments continuously seek objective measures of scholarly activity among their faculty. This study aims to analyze gender and academic position, career duration, and academic productivity among current radiation oncology faculty at U.S. academic institutions.

Methods:

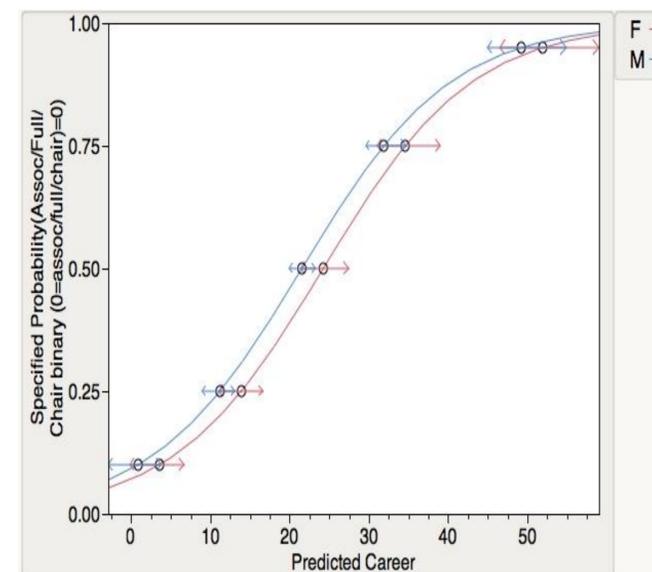
We identified 82 academic radiation oncology departments as listed in the American Society for Radiation Oncology 2009 Directory. We then accessed each publically available department website identifying current faculty as listed by the individual institutions. We included clinical faculty and divided academic ranks into chair/professor, associate professor, assistant professor and other (unspecified, instructor or faculty). We recorded and analyzed numeric metrics for faculty using a commercially available database (SCOPUS) including total number of publications and h-index.

Academic Rank breakdown by Gender

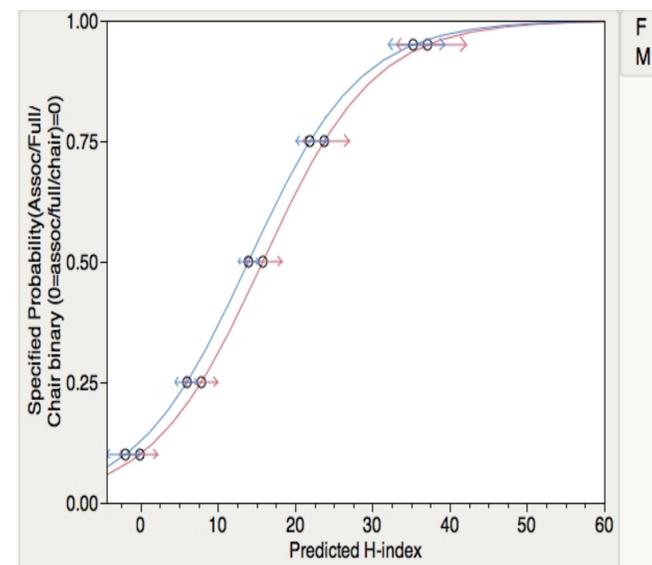


| Academic Position | Gender n, (%) | Mean h-index (95% CI) | Mean # of pubs (95% CI) |
|-------------------|-------------------|-----------------------|-------------------------|
| All | Female 289 (27.8) | 7.5 (6.3-8.8)* | 25.2 (17.3-33.1)* |
| | Male 744 (72.2) | 12.27 (11.5-13.1)* | 55.86 (50.94-60.78)* |
| Senior Faculty | Female 32 (13.7) | 20 (15.7-24.3) | 83.9 (51.6-116.2)* |
| | Male 202 (86.3) | 24 (22.7-26.1) | 131.3 (118.5-144.2)* |
| Junior Faculty | Female 178 (32.2) | 5.8 (4.9-6.7) | 16.1 (12.2-20.0)* |
| | Male 374 (67.8) | 7.19 (6.5-7.8) | 23.7 (21.0-26.4)* |
| Other | Female 74 (30.6) | 6.4 (4.3-8.6) | 21.9 (9.9-33.9) |
| | Male 168 (29.4) | 9.0 (7.6-10.5) | 36.7 (28.5-44.9) |

Nominal Logistic Fit- academic rank by predicted career



Nominal Logistic Fit- academic rank by predicted h-index



Results

Out of 1033 current academic radiation oncology faculty, 289 were women and 744 were men.

Men had a higher mean h-index and publications overall, and were more likely to be chair/professor or associate-level faculty.

Men had more publications at each academic level, with the exception of assistant professor, where no difference was noted. However, there were no detectable gender differences in h-index at the assistant or full/chair levels. On multivariate analysis, there were significant correlations between duration of career, gender, academic position and h-index ($p < 0.01$).

Conclusion

The determinants of a successful career in academic radiation oncology are certainly multi-factorial, but our data show a systematic gender association.

Though women are less likely to become senior faculty, women who achieve senior faculty status have a mean h-index and number of publications comparable to their male counterparts. These results suggest early career development and mentorship of female radiation oncology faculty may help to further diversify our field and narrow productivity disparities.

References

- 1.) Women in U.S. Academic Medicine: Statistics and Benchmarking Report. <https://members.aamc.org>
- 2.) Jagsi R, Guancial EA, Worobey CC et al. The "Gender Gap" in authorship of academic medical literature- a 35-year perspective. *N Engl J Med.* 2006;355(3): 281-287.
- 3.) Jagsi R, DeCastro R, Griffith KA et al. Similarities and differences in the career trajectories of male and female career development award recipients. *Acad. Med.* 2011; 86:1415-1421.
- 4.) Jagsi R, Griffith KA, Stewart A et al. Gender differences in the salaries of physician researchers. *JAMA* 2012; 307(22):2410-2417.
- 5.) Hirsch JE. An index to quantify an individual's scientific research output. *Proc Natl Acad Sci. USA* 2005; 102: