Association of Gender and Parenthood With Conference Attendance Among Early Career Oncologists

Little is known about early career oncologists' priorities regarding attending national conferences or whether their experiences differ by gender.

Methods | After approval and waiver of documentation of written informed consent by the University of Michigan institutional review board, in 2017, we surveyed 449 oncologists at 47 National Cancer Institute-designated comprehensive cancer centers who had completed their hematology/oncology or radiation oncology training within 6 years after 2010, identified by internet searches, mailing a $20 gift and a questionnaire asking about conference attendance, perceived benefits and barriers, and demographics. All variables analyzed were self-reported except specialty, which was based on publicly available information. For 2 questions scoring importance on a scale of 1 to 10, the end points were labeled "not at all important" and "extremely important"; for an item scoring satisfaction on a scale of 1 to 10, the end points were labeled "not satisfied at all" to "very satisfied." We report raw frequencies along with comparisons by gender adjusted for specialty. Multivariable linear regression models evaluated factors associated with conference attendance and with career satisfaction. Data were analyzed using SAS statistical software (version 9.4; SAS Institute, Inc).

Results | Of 449 oncologists surveyed, 248 (55%) responded: 63 male medical oncologists, 65 female medical oncologists, 77 male radiation oncologists, and 43 female radiation oncologists. Comparison of respondents with nonrespondents showed no difference by gender, but a significant difference by specialty (48.4% [120/248] of respondents vs 32.3% [65/201] of nonrespondents were radiation oncologists, $P < .001$).

Most had children who required adult supervision (77 of 108 women [71.3%] vs 106 of 140 men [75.7%], $P = .52$). Of the 108 women, 80 (74.1%) had full-time employed spouses vs 63 of 140 men (45.0%) ($P < .001$). The mean (SD) weekly hours spent on parenting and domestic tasks were 41.5 (27.1) for women and 32.2 (24.0) for men ($P = .01$).

Women attended significantly fewer conferences in the past year than men (median [interquartile range], 2 [1-3] vs 3 [2-4]; $P = .004$). On multivariable analysis, women attended 0.58 fewer conferences over the past year than men after adjustment for specialty, age, years since residency, degree, spouse employment status, parental status, and weekly hours on domestic tasks.

Both men and women answered a mean of 8 ($P = .78$) to the question, "How important do you think attending conferences are to an oncologist's career advancement?" Men and women did not differ in endorsing perceived benefits to attending conferences, including presenting one's research, networking, educating oneself regarding advances in oncology, and participating in committees.

Women were more likely to indicate that whether the meeting conflicted with childcare responsibilities was important when deciding to attend a conference (most important factor for 33 women [30.6%] vs 24 men [17.1%], $P = .01$).

Fewer men than women indicated that having children had influenced their attendance of professional conferences "very much" or "quite a bit" (49 men [35.0%] vs 52 women [48.2%], $P = .04$). Women scored the importance of providing on-site childcare more highly than men (mean [SD], 6.8 [2.9] vs 5.2 [3.0], respectively; $P < .001$). More women rated on-site childcare as "extremely important" (10/10) than men (30 women [27.8%] vs 14 men [10.0%], $P = .045$).

Women reported significantly lower career satisfaction than men (mean, 7.7 for men vs 7.2 for women, $P = .03$). On multivariable analysis (**Table**), gender and conference attendance both independently correlated with career satisfaction; female sex was associated with lower satisfaction (−0.57 compared with male sex; 95% CI, −1.04 to −0.10; $P = .02$) and conference attendance was associated with increased satisfaction (plus 0.57 per conference attended; 95% CI, 0.05-0.33; $P = .01$).

Table. Multiple Variable Linear Regression Model of Career Satisfaction Among 223 Respondents With Complete Information on All Variables Included

Characteristic	Estimate (95% CI)	*P* Value
Intercept[a]	7.04 (5.61 to 8.46)	<.001
Gender		
Male	1 [Reference]	.02
Female	−0.57 (−1.04 to −0.10)	
Age, y		
Per 1-year increase (centered at 37)	−0.10 (−0.18 to −0.01)	.02
Has children who require adult supervision		
Yes	0.67 (0.06 to 1.28)	.03
No	1 [Reference]	
Conferences attended in past year		
Each additional conference beyond 0	0.19 (0.05 to 0.33)	.01
Goals: having a reputation as an expert in field is quite/very important		
Yes	−0.69 (−1.33 to −0.06)	.03
No	1 [Reference]	

[a] This model estimates career satisfaction score. Respondents were asked, "All things considered, on a scale of 1 to 10, how satisfied are you with your career?" Other theoretically prespecified independent variables were included in the model (not listed above) that were not independently significant: specialty (estimate 0.05 for radiation vs medical oncology), years since completing residency (estimate 0.02 per 1-year increase, centered on its mean, which was 6 years among all respondents as self-reported at the time of survey in 2017), spouse/employment status (estimates 0.05 for full-time employed spouse, 0.23 for part-time employed spouse, and 0.12 for unemployed spouse vs reference category not married/partnered), time spent on domestic responsibilities (estimate 0.005 per 1-hour increase centered at 36), or indicating that various other career goals were quite or very important (estimates for: leadership, 0.11; publishing high-quality research, 0.64; publishing prolifically, −0.15; high salary, −0.16; patient-care excellence, 0.98; teaching, 0.20; work-life balance −0.47). The intercept is the model prediction for an individual in the reference categories for all categorical independent variables and central values of all continuous variables.

Discussion | Our findings extend prior research in other settings[1-3] to support visible, innovative actions by oncology meeting organizers, including women's networking centers and facilitation of childcare services, as steps to ensure full participation of all those who might contribute or benefit at conferences.[4]

The primary limitations of this study are that the data were self-reported and respondents (55% response rate) might not be representative of the full population. We did not measure training institution or socioeconomic status (which may vary even in this high-earning population, creating unique challenges for some). The sample contained too few single parents to analyze separately. Confounding or reverse causation is possible. However, the findings suggest the possibility that facilitating attendance at national meetings might engage physicians in ways that may improve well-being and professional satisfaction.

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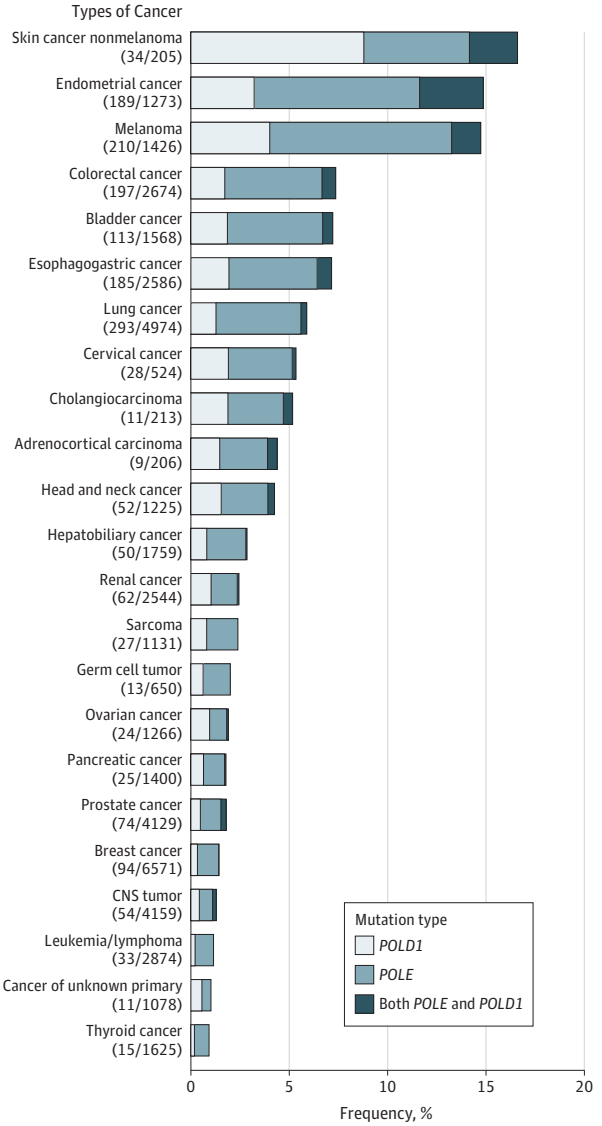
Evaluation of *POLE* and *POLD1* Mutations as Biomarkers for Immunotherapy Outcomes Across Multiple Cancer Types

Immune-checkpoint inhibitor (ICI) therapy, including antibodies targeting programmed cell death protein 1(PD-1), programmed death-ligand 1 (PD-L1), or cytotoxic T-lymphocyte-associated protein 4 (CTLA4), has demonstrated impressive clinical efficacy in controlling advanced cancers. Recent studies have identified several positive predictive markers for ICI, including high levels of microsatellite instability (MSI-high), PD-L1 overexpression, and elevated tumor mutation burden (TMB).[1] The genes that encode DNA polymerase epsilon (*POLE*) and delta 1 (*POLD1*) are essential for proofreading and fidelity in DNA replication.[2] Their germline or somatic mutations can lead to DNA-repair deficiencies and carcinogenesis via a DNA

Figure 1. Prevalence of *POLE*/*POLD1* Mutations in 47 721 Patients With Different Cancer Types



CNS indicates central nervous system.