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COUNCIL PERSPECTIVE

Cardiovascular Medicine and Society

The Pregnant Cardiologist

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ABSTRACT

Women are a consistent minority in the field of cardiology, with concerns regarding balancing career and parenting responsibilities often cited as a contributing factor to this under-representation. To investigate the impact that a career in cardiology may have on the family planning decisions of female cardiologists, the Women in Cardiology section of the American College of Cardiology conducted a voluntary anonymous survey. The following perspective highlights lessons learned from the survey, and potential solutions to the issues surrounding maternity leave, radiation exposure during pregnancy, and breastfeeding accommodations raised by these data. Given that most female cardiologists are pregnant at some point during their careers, particularly during the vulnerable periods of training and early career, improving the experience of pregnancy and early parenthood for all cardiologists may secure the best possible candidates to the field of cardiology. (J Am Coll Cardiol 2017;69:92–101)

Women remain under-represented in the field of cardiology as compared with men, comprising 10% of board-certified cardiologists (American College of Cardiology [ACC], unpublished data, 2016). In 2015, 21% of general cardiology fellows and 8% of interventional cardiology fellows were women (1). Although the Association of American Medical Colleges found that women comprised 33% of the physician workforce in 2013, of the 41 specialties investigated, cardiology (with 12% women) was in the bottom 9 with respect to the proportion of women, and interventional cardiology (with 7% women) was in the bottom 4, illustrating that women are particularly under-represented in cardiology as compared with other fields (2).

A work-life survey conducted by the Women in Cardiology (WIC) section of the ACC in 2015 revealed that female cardiologists were less likely than their male counterparts to be married (74% vs. 89%; $p < 0.05$) or have children (72% vs. 86%; $p < 0.05$) (3). Women were also less likely than men to have a spouse providing daycare (13% vs. 57%; $p < 0.05$), more likely to require additional childcare overnight (48% vs. 24%; $p < 0.05$), and more likely to have interrupted training or practice for more than 1 month (28% vs. 13% for training, 44% vs. 15% for practice; $p < 0.05$ for both comparisons), suggesting that the experience of women differs significantly from men with respect to family planning and childcare. A recent survey comprised predominantly of

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participants from European Society of Cardiology countries (85%) explored barriers to women entering interventional cardiology, and similarly revealed that women were significantly less likely to be married (57% vs. 80%; $p < 0.001$) or have children (53% vs. 80%; $p < 0.002$) when compared with male cardiologists (4). When asked why cardiologists did not pursue interventional cardiology, women more commonly cited concerns regarding radiation exposure as compared with men (20% vs. 12%; $p < 0.001$). When compared with women older than 40 years of age, women <40 years of age were twice as likely to report radiation exposure as a barrier to choosing interventional cardiology (12% vs. 27%) (4).

Together, these data reveal that female cardiologists are less likely than their male colleagues to be married or have children, and have differential childcare roles. However, the experience of pregnancy among cardiologists has never been investigated, although it is speculated that concerns surrounding pregnancy may deter women from choosing a career in cardiology (5,6). Thus, the WIC Pregnancy Workforce Work Group sought to determine the impact of a career in cardiology on issues of family planning to understand better the current experience and inform strategies for reform. To this end, a voluntary anonymous online survey was sent to female physician members of the ACC through a listserv containing 5,005 e-mail addresses. Delivery was unsuccessful to 340 addresses. Between July 23, 2015, and August 21, 2015, a total of 501 women completed the survey, which asked about a range of topics regarding family planning considerations; infertility and use of assisted reproductive technology (ART); career stage of pregnancies; pregnancy complications; maternity leave and breastfeeding durations; and work-related considerations, including questions regarding family planning during interviews, and maternity leave and breastfeeding experiences. Given that specialties involving radiation exposure, including cardiology, may incur particular concerns during pregnancy, we also sought to determine whether concerns regarding radiation exposure affected family planning, the proportion of cardiologists who experienced radiation exposure during pregnancy, and the frequency of use of radiation reduction and monitoring strategies.

The response rate to our survey (11%) is higher than that previously reported for ACC listserv survey studies (3% to 8%) (7). A primary limitation of our survey was its voluntary nature, with the potential that the responding population skewed toward those particularly interested in pregnancy issues. In addition, on the basis of respondent comments, an updated version was sent to women within 24 h of the initial survey release that enabled them to provide responses for multiple pregnancies for certain questions regarding breastfeeding and maternity leave, whereas the initial version only allowed for a single response. A total of 294 women responded to this second version, and when women identified themselves as repeat takers, their responses to the first version were omitted from the final dataset. Data reported are merged from both versions. For certain analyses of questions that differed between version 1 and version 2 (specifically the questions that enabled respondents to provide unique responses for multiple pregnancies) only data reported for the first pregnancy in version 2 were considered. When applicable, it is specified in the discussion of the results that these data reflect a single pregnancy.

Forty-one percent of survey respondents were between 30 and 40 years of age, although they spanned a variety of career stages: 14% in training (with 2% in medical residency), 30% early career professionals <7 years out of training, 30% midcareer professionals (7 to 20 years out of training), 24% later-career professionals (>20 years out of training), and 1% retired (**Figure 1A**). Sixty-four percent self-identified as white, 6% as black/African American, 21% as Asian/Pacific Islander, 7% as Hispanic/Latino, <1% as American Indian/Alaskan Native, and 2% preferred not to specify (**Figure 1B**).

The points that emerged are discussed next.

MOST FEMALE CARDIOLOGISTS BECOME PREGNANT DURING THEIR CAREERS

Most women (76%) experienced at least 1 pregnancy, and among the 24% who had never been pregnant, 45% reported that they hoped to become pregnant in the future. These rates are comparable with data from the 2015 work-life survey in which 72% of women reported having children, despite an older average respondent age to the work-life survey as compared with the family planning survey (3). When cardiologists 50 years of age or older were compared with those younger than 50 years of age, there was no difference in the proportion of women who had been pregnant (80% vs. 75%) versus those who had not (20% vs. 25%; $p = 0.19$) (**Figure 1C**). However, data from the work-life survey did suggest an increase in the proportion of women with children over time, with 63% of women in 1996 having children as compared with 72% in 2015 ($p < 0.05$) (8).

ABBREVIATIONS AND ACRONYMS

ABIM = American Board of Internal Medicine

ACC = American College of Cardiology

ART = assisted reproductive technology

WIC = Women in Cardiology