

# A Survey of Women in the Perfusion Workforce: 2021

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**Abstract:** A diverse and equitable working environment is desirable. In 2011, a survey was distributed to all female perfusionists in the United States. This survey suggested that the female perfusionists share the same difficulties as women in the labor force. The role of women in society in general is clearly changing. Female perfusionists have been part of that evolution. Promoting equality and respecting diversity are central to life today. A follow-up survey was distributed to evaluate the status and the change in gender stereotypes in the field of perfusion over the past 10 years. Women make up nearly half of the U.S. labor force and 35.7% of the present perfusion workforce in North America (1,077 certified women). Women make 82 cents for every dollar that men earn and this disparity widens for women with more education. The purpose of this survey was to poll women in perfusion to evaluate concerns and opinions in their careers and to compare to the 2011 survey results. In December 2021, a 39-question survey (surveymonkey.com, San Mateo, CA) was made available to all female perfusionists in North America via social media websites (Facebook.com, Perfusion.com, LinkedIn.com, Perflist, Perfmil, and FPP Listserv). There were 384

responses to the 2021 survey compared to the 538 responses in 2011. About 32.1% of the survey participants have been used in perfusion for more than 20 years; 37.6% have earned a master's degree compared to 2011, where 18.3% had master's level education; 72.5% are the financial providers for their family with 44.2% earning \$101–150,000.00 and 40.3% greater than \$200,000.00, which is a significant change from 2011; 61.5% consider themselves under moderate stress compared to 63.0% in 2011; 94.3% take call on a regular basis; and 74.1% feel they miss essential family functions because of their schedules. Similarly, 62.8% felt discriminated against because of gender compared to 50.9% in 2011. This survey suggests that the female perfusionists have shown to be assertive (72% are the primary financial supporter of their families) and competent in the field of cardiovascular perfusion (nearly 40% have masters degrees). Further analysis is needed to discern whether female perfusionists are treated with comparable respect as their male colleagues when 50.0% report some discrimination or harassment in their workplace. **Keywords:** gender, perfusion, diversity, equality, discrimination. *J Extra Corpor Technol. 2022;54:29–34*

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In 2013, the published survey results consisting of 538 respondents, which represented 45% of all female certified perfusionists in North America and revealed that perfusion as a career comes with several stressors and maintaining a balanced family life was difficult. Even with an increased education level, women still face difficulties in the workplace. Women make 82 cents for

every dollar that men earn, and this disparity widens for women with more education (1). Women have advanced in the workplace with 19.3% of the female perfusionists polled holding chief perfusionist positions. However, the majority of women (50.9%) have felt discriminated against in the workplace (2).

Ten years has passed and a curiosity for what may have changed, as well as, the interest in diversity and inclusion in the workplace, prompted a 2021 survey of a new group of female perfusionists.

According to the United Nations 2030 Agenda for sustainable development, 17 goals are listed in an elaborate document published in 2015 that “envisions a world of universal respect for human rights, dignity, the rule of law and justice equality, and non-discrimination of respect for race,

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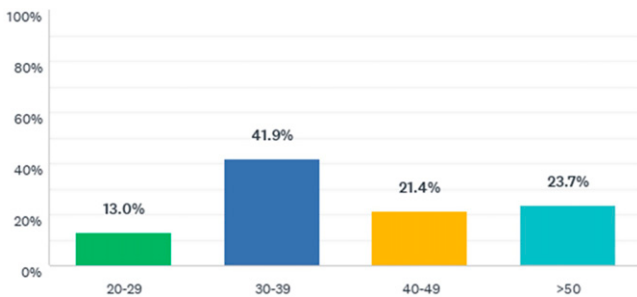
ethnicity and diversity and of equal opportunity permitting the full realization of human potential and contributing to shared prosperity” (3). Goal number five is: Achieve gender equality and empower all women and girls. The purpose of this research is to compare change in gender perceptions in the field of perfusion over the past 10 years.

**MATERIALS AND METHODS**

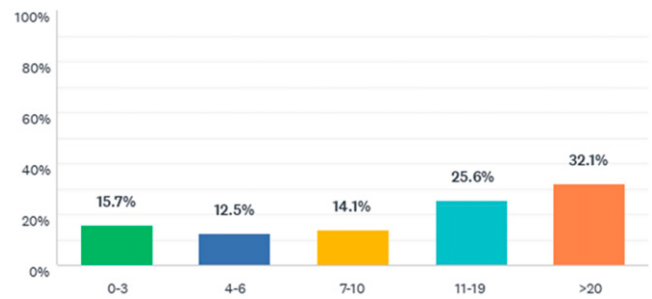
This study was deemed exempt from Institutional Review Board review. In December 2021, a 39-question survey (surveyMonkey.com, San Mateo, CA) was made available to female perfusionists in North America via social media websites (Facebook.com, Perfusion.com, LinkedIn.com, Perflist, Perfmail, and FPP Listserv). The survey was opened on March 3, 2021, and notifications for participation were posted on March 3, 5, and 16, 2021. The survey was closed on March 22, 2021. All questions from the 2011 survey were repeated to ensure a direct comparison. One final question was omitted from the 2021 survey, which was a free text area for respondents to explain what they were most concerned about at that time. The American Board of Cardiovascular Perfusion 2015–2016 survey results were used to calculate percentage of female perfusionists in the workforce (4). Descriptive data summaries and graphs were created using the SurveyMonkey.com platform.

**RESULTS**

There were 384 responses to the 2021 survey compared to the 538 in the 2011 survey. This response rate represents 35.2% of female-certified perfusionists in North America. Of the women surveyed, 13.0% were between 20 and 29 years old, 41.9% were between 30 and 39, 21.4% were between 40 and 49 years old, and 23.7% were 50 years or older (Figure 1). As Figure 2 shows, most of the perfusionists (31.2%) who responded had over 20 years of experience.



**Figure 1.** Age of female perfusionists.



**Figure 2.** Years of experience as perfusionist.

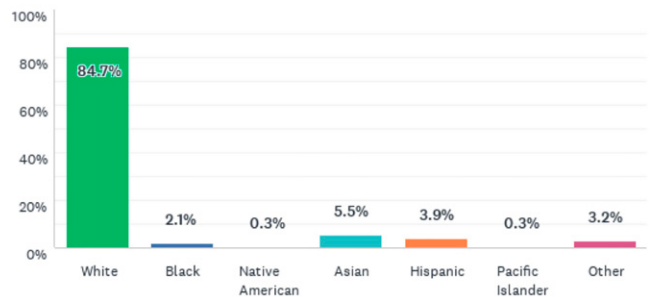
In the 2011 survey results, Caucasians comprised the vast majority of female perfusion respondents (90.4%), whereas in the 2021 survey results, as illustrated in Figure 3, 84.7% are white with a combination of Black, Native American, Asian, Hispanic, Pacific Islander, or Other (15.3%).

Female perfusionists make well above the national average of full-time working women in 2019 with median earning of \$47,299.00 (5). Figure 4 depicts (84.5%) of female perfusionists earning \$100,000 dollars and (10.5%) earning \$200,000 or more. In addition, Figure 5 depicts that in 2021, 72.5% of these women were the financial providers vs. 61.6% in 2011.

Educational experience has shifted from 18.3% with master’s level degrees in 2011 to 37.0% holding a master’s degree now in 2021 (Figure 6). Also reported for the first time, .3% of these women hold a doctorate degree.

Sixty-one percent of women report working while pregnant (Figure 7) and that same percentage reported taking a leave of absence after delivery (Figure 8). Figures Figure 9 and 10 show 61.2% of women surveyed have children and 38.8% have no children. Of the women with children, 76.4% have one or more.

Female perfusionists responded that they are working an average of 45 hours per week (Figure 11). Additionally, 94.3% of these women in Figure 12 take call, which is similar to the 2011 survey and typical for the



**Figure 3.** Race/ethnicity of perfusionists.

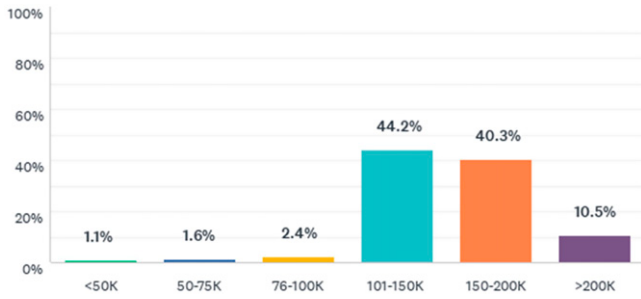


Figure 4. American perfusionist income demographics.

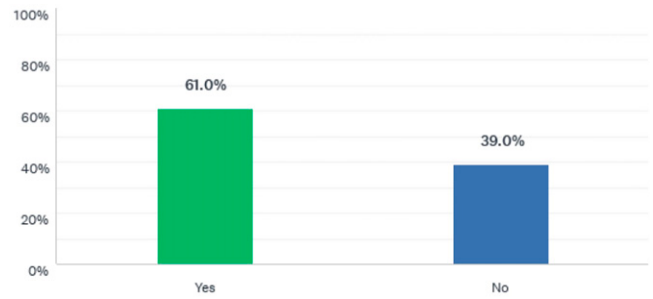


Figure 8. Leave of absence after delivery.

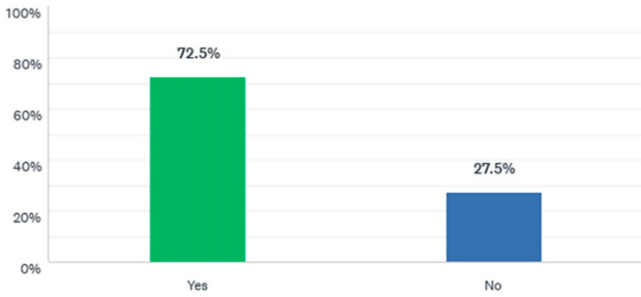


Figure 5. Financial provider.

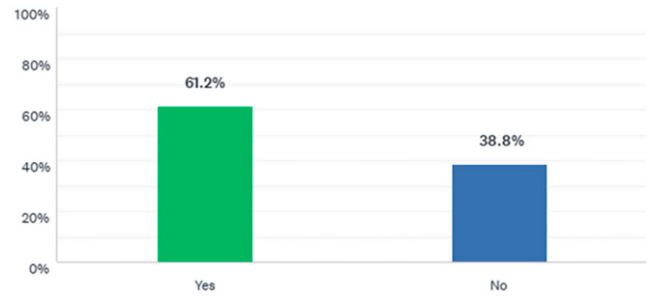


Figure 9. Do you have children?

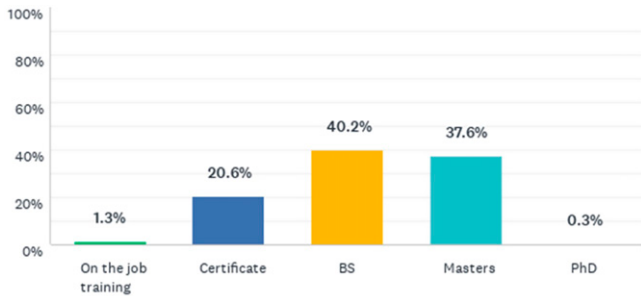


Figure 6. Education level.

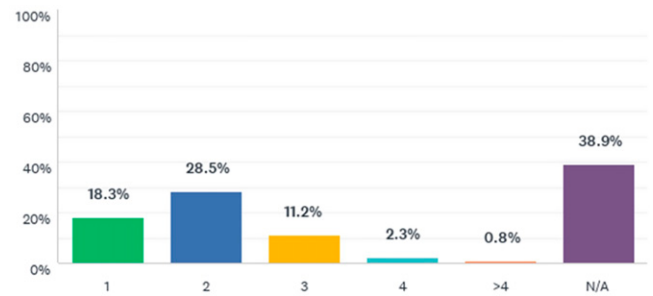


Figure 10. Number of children.

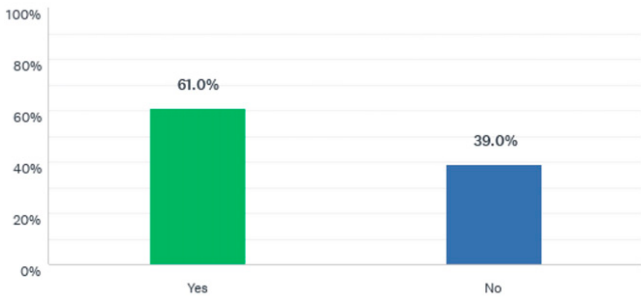


Figure 7. Working while pregnant.

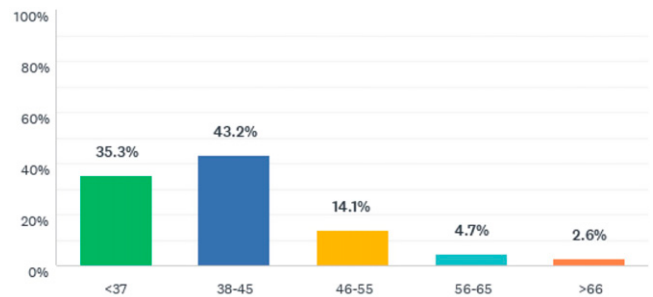


Figure 11. Average work week.

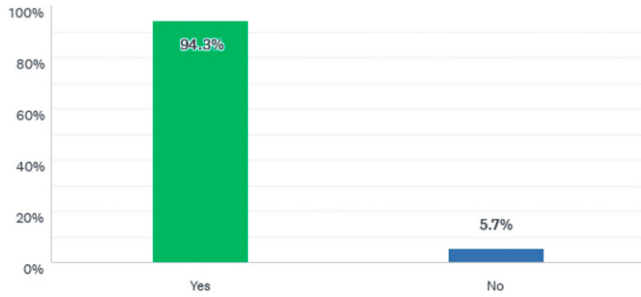


Figure 12. On call scheduled.

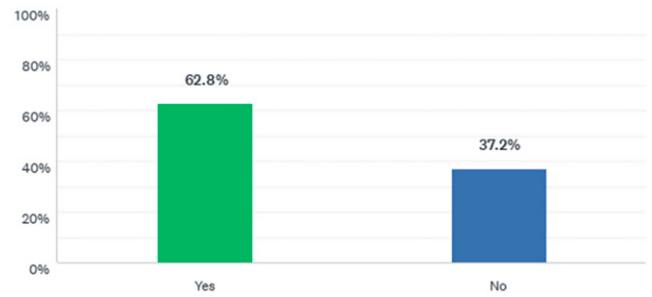


Figure 16. Discrimination.

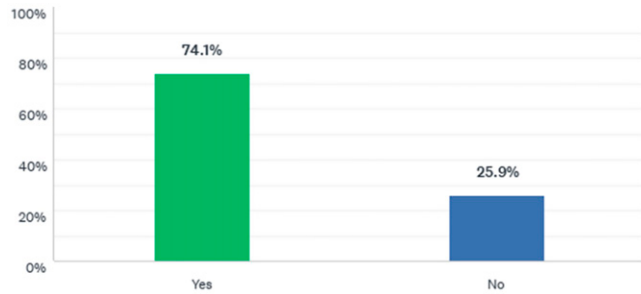


Figure 13. Missed family functions because of schedule.

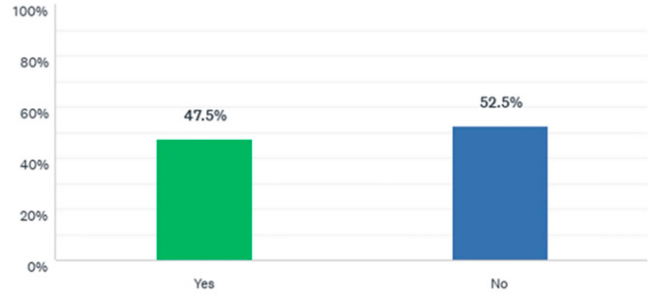


Figure 17. Harassment.

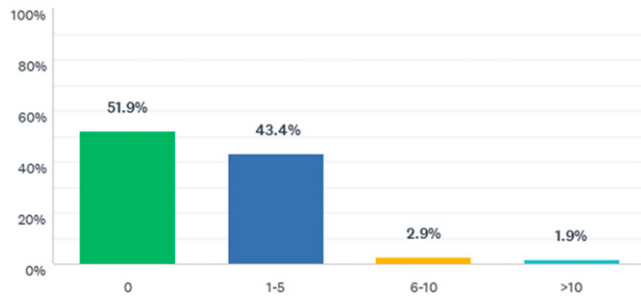


Figure 14. Days out of work per year for family emergencies.

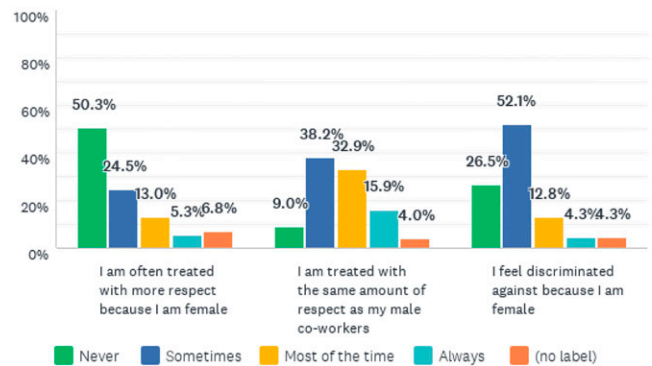


Figure 18. Respect for being female.

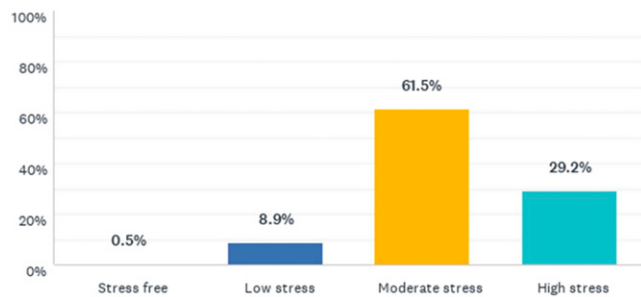


Figure 15. Stress level.

cardiovascular perfusion profession. Missing family functions because scheduling is reported (74.1%) in Figure 13, plus more than 51.9%, took zero days off for family

emergencies because these perfusionist are committed to patient care (Figure 14).

Stress level among these women is reported as moderate and high, which was similar in both surveys; however, of note is that 0.5% of perfusionists report being stress free (Figure 15).

Women who felt they had been discriminated against in their workplace is 11.9% more than in the 2011 survey and some form of harassment in the workplace also increased (12%) from the 2011 survey results (Figures 16 and 17).

With women comprising 35.7% of the perfusion workforce, 87% of respondents felt that they were treated

with the same amount of respect as their male coworkers. About 5.3% of the women surveyed actually felt they were treated with more respect because they were female (Figure 18).

## DISCUSSION

The female perfusionist works in a surgical environment that is predominately been known to be a male-dominant workforce. In the authors' opinion, deconstruction of gender stereotypes in the surgical environment, such as women being less assertive and less competent than their male peers, translates into gender bias in the operating room. Expecting women to behave differently and put more effort into the workplace to achieve the same outcomes as their male peers is another gender bias that must be addressed (5,6).

Creating a work environment that is not only diverse, but also inclusive, is an integral part of reducing the gender gap. In addition, much emphasis is now placed on individuals to become part of a self-care culture. It is no longer a luxury to have self-care, rather it is part of the job to sustain perfusionists in the workforce (8). The greatest self-care a company can offer is ensuring employees decompress from their work. Typically, perfusionists work awkward hours and often overnight. On-call responsibilities after hours incorporate emergency procedures, stand-by operations, and other duties depending on hospital responsibilities. It is well known that a perfusionist is under a great deal of stress during working hours. According to Merkle et al., during cardiopulmonary bypass (CPB), peak stress levels were highest during the start and end of CPB; whereas medium to high mental and temporal workloads varied between the operative phases (7). Moderate and high stress levels were reported in both our surveys, and it should be noted that .5% of those polled feel stress free. Of the women surveyed, millennials born between 1981 and 1997 represents more than 50% of our group and are recognized as the generation of emotional intelligence, as they spend twice as much on self-care essentials than all others (8). This group incorporates workout regimens, diet plans, life coaching, and apps to improve their personal well-being (8).

Women spend 10 times more time on unpaid tasks such as childcare, domestic chores, and senior care than do men (9). Keeping in mind that the female perfusionist is averaging more than 45 hours per week working in the operating room and additional 30+ hours per week is spent in unpaid tasks, self-care may be limited. This unequal distribution of caring responsibilities is linked to discriminatory social institutions and stereotypes on gender roles. More than 61.4% of women in perfusion reported that they have

one or more children and while they were pregnant, they continued working as a perfusionist. After delivery, only 0.6% were able to take 1-year maternity leave. Ruth Bator Ginsberg has said it best when removing stigma around maternity leaves: "Women will have achieved true equality when men share with them the responsibility of bringing up the next generation."

Women make up nearly half of the labor force in the United States, and that share will remain steady through the coming decades (2060) according to the bureau of labor statistics historical data and labor force projections (9). Also, important to note is the fact that although women's annual earnings were 82.3% of men's according to the bureau of labor statistics data in 2020, with the average American income, demographics for full-time working women median earnings were \$47,299.00 (10). The perfusionists' salary has grown yearly since our original 2011 survey. Full-time female perfusionists in 2021 had earnings between \$100,000 to greater than 200,000. The dependence on these female perfusionists as the financial providers for their families have increased as well since the 2011 survey, having now 72.5% in 2021 vs. 61.6% in 2011.

The final questions asked of female perfusionists in the 2021 survey had to do with respect, discrimination, and harassment. About 50% of the female perfusionists polled did not feel that they are treated with more respect because of being female, rather feel they are treated with the same respect as male coworkers. Still some female perfusionists feel they have been discriminated against and that number has increased since the 2011 survey by 11.9%. Additionally, some form of harassment in the workplace has been reported, with a 12% increase. Clearly, there is room for improvement for all genders in all professions, as it is having equal rights and opportunities that we should strive.

Regardless of the many discrepancies among women and men in the profession of clinical perfusion, and overwhelmingly 80% of females in this survey recommend this job to either males or females.

Women in perfusion workforce poll of 2021 represents an overview of the changes that have taken place for female perfusionists in the workforce since 2011. This survey showing 72% of female perfusionists are the financial providers for their family and nearly 40% have a master's degree suggests that the female perfusionists have shown to be assertive and competent in the field of cardiovascular perfusion. Perfusion as a career comes with several stressors and maintaining a balanced family life can be difficult. There may still be some consideration for understanding whether there is respect given to the female perfusionists, as 50.0% report some discrimination or harassment in their workplace. Future investigation may help dispel this perceived difference in reaching gender parity.

## LIMITATIONS

This survey did not capture the entire population of female perfusionists in America, with 35.2% of female certified perfusionists in North America responding to this survey. There was not a way to validate gender, but rather respondents who identify as female were included in this study. Since there was not a direct correlation to respondents, the authors were unable to ascertain whether respondents were active, retired, or inactive perfusionists.

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