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I, **Chloe Barnett**, hereby submit this original work as part of the requirements for the degree of Master of Science in Genetic Counseling.

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The Gendered Pay Gap in Genetic Counseling

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The Gendered Pay Gap in Genetic Counseling

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by

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Abstract

A gendered pay gap in the genetic counseling profession has been identified in recent years, though reasons for its existence have not been explored in depth. The primary aim of this study was to determine what demographic characteristics and career experiences influence annual salary rates and which of those factors differ between male and female genetic counselors. The secondary aim of this study was to determine if genetic counselors perceive a pay gap and to identify attitudes towards their salaries. Surveys were sent to the nearly 4000 genetic counselors who are members of the National Society of Genetic Counselors (NSGC) and we report results from 355 respondents. A significant interaction was found between gender and position (direct vs. non-direct patient care). In the best-fitting multiple regression model, male genetic counselors earned \$23,736 more than females in non-direct patient care roles ($p < 0.001$) and \$1,552 more than females in direct patient care roles ($p < 0.001$). Years of experience, leadership experience score, negotiation attempts, licensure, and certification were all found to be predictors of annual salary. Most female genetic counselors perceived there to be a pay gap and most male genetic counselors did not ($p = 0.01$). Results from this study could contribute to changes in employment and compensation practices, as well as impact genetic counselors' strategies in role- and salary-based conversations.

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INTRODUCTION

The Wage Gap

Although the genetic counseling field is 95% female, men in the field consistently earn more than women (NSGC, 2018, 2019). In 2019, male genetic counselors earned an average of \$9,846 more than female genetic counselors across all position types (NSGC, 2019). Gendered inequity in pay for the same job is reflected throughout society. It has been over 50 years since the passage of the Equal Pay Act in 1963, yet women only make 80 cents for every dollar that a man earns (Fontenot, Semega, & Kollar, 2018). Asian women earn the most in comparison to white men (85 cents to the dollar) and Hispanic women earn the least (53 cents to the dollar). When comparing white women to white men, women make 77 cents to the dollar (Hegewisch, 2018). Societal explanations for this pay gap between men and women include higher rates and success of negotiation attempts for males, a disproportionately higher rate of males in leadership positions, and higher rates of females working part-time and/or shouldering a greater proportion of family care requirements (Artz, Goodall, & Oswald, 2018; Bowles, Babcock, & Lai, 2007; Budig & England, 2001; Dunn, 2018; Hultin, 2003; McKinsey & Company, 2018).

The degree to which the aforementioned factors contribute to the pay gap in genetic counseling has not been specifically explored. However, in previous years NSGC did identify that male genetic counselors tend to work in non-direct (non-patient-facing) positions more often than female genetic counselors, which tend to be higher earning overall. Yet in 2018 and 2019 the gap remained regardless of care sector and, in fact, widened within non-direct patient care settings (NSGC, 2018; NSGC, 2019).

Devaluation

In reviewing public data available on gender distribution in other healthcare fields similar to genetic counseling, genetic counseling emerged as having a uniquely high percentage of women, 95%. Other healthcare fields that are often seen as predominantly female do not nearly reach that proportion; nursing, which is often represented as a classic example of a woman's field, is only 83% female as of 2018 (Kaiser, 2018b). Even though genetic counseling has been cited as a STEM field (Hoskovec, 2014) and genetic counselors have extensive training in human and molecular genetics, genetic counseling is often regarded as a helping profession. Of note, Gerard et al. (2018) surveyed 1389 undergraduates from 39 universities across the US and found that genetic counseling is often seen as a feminized field. Respondents believed that genetic counseling is characterized by helping others and focusing on psychosocial skills (Gerard et al., 2018). Feminization of a field, either by increasing the number of women or coding the field as "women's work" changes the way that people perceive it; through a process called devaluation, the field is perceived as less skillful, less complex, and less demanding (Judge & Livingston, 2008; Levanon, England, & Allison, 2009).

In one study examining the interaction between gender role orientation and earnings, Judge and Livingston (2008) analyzed long-term data from interviews of a subset of 12,686 participants in the National Longitudinal Survey of Youth (NLSY). These interviews occurred from 1979 (when participants were 14-22 years old) to 2007 (when participants were 42-50 years old). Their data revealed that occupations that embodied more traditional gender roles (e.g.: women as caretakers) were lower earning and seen as less valuable (Judge & Livingston, 2008). Levanon, England, and Allison (2009) analyzed 50 years of U.S. census data using fixed effects models. They noted a correlation between number of women in a field and lower rate of pay. The

correlation was especially strong when the field had had larger numbers of women for longer periods of time, supporting devaluation theory (Levanon et al., 2009).

Devaluation of a field and its identity as a feminine job may lower pay expectations. In a survey of 435 pre-career undergraduate students, Hogue, DuBois, and Fox-Cardamone (2010) found that both men and women expect that careers held predominantly by women will have a lower entry-level and lower peak-pay rate. They also noted that female respondents expected lower pay (starting and peak) regardless of occupational intention (Hogue et al., 2010).

Even though rate of pay may be less overall for female-dominated fields, due to the process of devaluation, men in those fields tend to fare better than their female counterparts (Budig, 2002; Greene, El-Banna, Briggs, & Park, 2017). Budig (2002), like Judge and Livingston, surveyed a subset of the NLSY and found that men keep their earnings advantage over women even when they are in a significant minority and that men have faster wage growth than women in predominantly female fields (Budig, 2002). Results from another study that focused on nurse practitioners (88% female) found a significant wage gap between males and females which grew over time when comparing recent graduates (0-4 years post-graduation) to those who had been practicing for much longer (20+ years) (Greene et al., 2017). These findings support the idea that male numerical underrepresentation in a field increases advantage. Furthermore, as the proportion of women in a field increases, the within-occupation wage disparity between men and women increases as well (Kim, 2018). Since men only make up 5% of the field of genetic counseling, it is possible that the pay gap between male and female genetic counselors can be explained in part by its femininely-coded job status and males' status as numerically underrepresented.

Career Experiences

Other possible explanations for the gendered wage gap in genetic counseling could include starting pay discrepancies, differences in advancement opportunities, differences in the likelihood of holding leadership roles, propensity for part-time work, and disproportionate family care requirements, all of which have been explored as explanations for the societal pay gap.

Starting Pay

Studies have reported significant starting pay discrepancies within some healthcare fields, which could directly impact the ability to increase compensation throughout a woman's career (Greene et al., 2017; Lo Sasso, Richards, Chou, & Gerber, 2011). Additionally, men tend to have a higher starting pay in all employment sectors, even when controlling for contributing factors such as previous experience and educational attainment (Graham, Hotchkiss, & Gerhart, 2000; Orazem, Werbel, & McElroy, 2003). In a study of newly graduated physicians in New York, Lo Sasso, Richards, Chou, & Gerber (2011) found a starting salary gap of \$16,819 that could not be explained by specialty choice, practice setting, work hours, or a variety of other characteristics (Lo Sasso et al., 2011). Greene et al. (2017) looked at salaries for 6591 nurse practitioners, a STEM field that is 88% female (Kaiser, 2018a), and found that female nurse practitioners who were recent graduates earned \$7405 less than their male counterparts – a gap that widened to \$15,605 for those with 5-9 years of post-grad experience and \$21,090 for those who were 20+ years post-grad (Greene et al., 2017). With a similar (though smaller) salaries and similar gender distribution, genetic counseling could be affected by the same phenomena.

Salary Negotiation

In general, men may also have an easier time negotiating salary increases than women, regardless of starting pay, which translates to higher salary overall (Artz, Goodall, & Oswald,

2018). In a study of college aged adults involving four different experiments, Bowles, Babcock, & Lai (2007) assessed respondents' perceptions of hypothetical interviewee candidates. They created fictional interview transcripts and then fictional interview videos and asked respondents to describe the candidate and indicate willingness to work with the candidate. They found that women may be socially penalized by attempting to negotiate salary and position: when they negotiate, they are seen as too demanding or pushy, which in turn lowers women's propensity to negotiate (Bowles et al., 2007). Others have found that women tend to estimate their own value based on their perception of what other women earn; by lowering their pay expectations, women reduce their entitlement to higher starting salary and ability to later negotiate raises (Barron, 2003). Female genetic counselors may be unaware of their earning potential, as they compare themselves to other women in the field. On the other hand, male genetic counselors may be better or more successful at negotiating initial starting pay as well as raises later in their career. These joint factors of lower self-valuation by women and increased negotiating ability by men may perpetuate a wage gap in the field of genetic counseling.

Leadership Experiences

In their annual "Women in the Workplace" report that looks at data from 279 companies employing over 13 million people, McKinsey & Company (2018) showed that across all fields, women are severely underrepresented at higher levels in the corporate pipeline. Women make up only 1/5th of C-suite leaders (CEOs, COOs, and CFOs) (McKinsey & Company, 2018). This disparity begins much lower in the corporate pipeline, with only 72 women for every 100 men promoted to a managerial position out of entry-level (McKinsey & Company, 2018). Often, with higher levels of responsibility comes higher levels of pay.

In fields that are predominantly female, men tend to experience a “glass escalator” effect: they obtain leadership and managerial positions at a higher rate than equally qualified women (Hultin, 2003). In a large-scale retrospective study carried out in Sweden, Hultin found that men in predominantly female fields were almost twice as likely to receive internal promotions than their female counterparts and that their promotion chances increased with job duration (Hultin, 2003). Hultin also found that women in female dominated fields fared the worst, with women in mixed (more equal gender distribution) and male dominated fields having higher promotion rates (Hultin, 2003). As discussed above, Budig (2002) also reported that when males are numerically underrepresented in a predominantly female field, they experience increased social capital and more upward mobility than their female colleagues. Therefore, male genetic counselors may be disproportionately represented in leadership roles, impacting the potential salaries of female genetic counselors in lower roles.

Having more women in leadership positions could help alleviate pay discrepancies. More women in executive positions can foster a more inclusive and equal working environment (McKinsey&Company, 2018; Shin, 2012). An environment in which women feel that they have more social capital could also encourage higher rates of successful negotiation at all levels.

Part-time Work and Breaks in Employment

According to the Organization for Economic Cooperation and Development (OECD), an international intergovernmental economic body, women across the world are almost twice as likely to hold part-time positions and experience breaks in employment than men (OECD, 2017). In 2018, the PSS reported that 12% of genetic counselors work part-time, defined as working less than 37.5 hours per week. Since males only make up 5% of the field, a large proportion of part-time respondents must be women. Dunn (2018) analyzed data from the Current Population Survey, which is sent out to 60,000 households across the US, and found that most people who work part-

time do so for non-economic reasons (Dunn, 2018). A non-economic, or “voluntary,” propensity for part-time work may stem from a desire for flexibility often related to home and family responsibilities (Dunn, 2018). Although the unequal burden of unpaid work at home has become smaller over time, women still take on the larger share of childcare and other family-care responsibilities (OECD, 2017; WHCEA, 2014). Therein lies the possibility that female genetic counselors are choosing part-time work more often than male genetic counselors, which could impact their long-term earning potential. Additionally, a history of part-time work may impact a female genetic counselor’s perception of her own value and therefore alter her pay expectations.

Women may also experience breaks in employment for non-economic reasons, often relating to child- and family-care (Budig & England, 2001; Juhn & McCue, 2017). When taking time off to focus on family, women can face the “Motherhood Penalty” (Budig & England, 2001). Kahn, Garcia-Manglano, and Bianchi (2014) used data from the National Longitudinal Survey of Youth-Women to analyze the impact of motherhood on women as they age from their 20s to 50s. They followed 4,730 women and found that motherhood negatively impacted labor participation, occupational status, and wage; in addition, number of children increased the cost of motherhood and some of the cost could be recuperated over time as the women and their children aged (Kahn et al., 2014). NSGC found that males had significantly more years in their individual area of practice (NSGC, 2018). If male genetic counselors are holding a single position for longer, with fewer breaks in employment, it would be reasonable that they are earning more than female genetic counselors. It is possible that female genetic counselors take more breaks in full-time employment due to family responsibilities. However, male genetic counselors may be earning more than female genetic counselors with the same amount of time in a single position, which would represent an institutional and professional dilemma.

Social Impact

Paying women less than their male counterparts represents not only a social dilemma, but a tangible economic one as well. In 2017, women would have produced almost \$300 billion more in revenue if they received equal pay (Fredrickson, 2018). Nearly half of all families now have a female breadwinner who is either a single mother head-of-household, or married and providing at least 40% of the couple's earnings (Anderson, 2016). The fiscal impact of wage inequality is seen in more than just lost national revenue: almost 26% of all families with a female head-of-household and no husband present live in poverty compared to 13% of families with single male head-of-household (Fontenot, Semega, & Kollar, 2017). Since genetic counseling has such a high proportion of women in the field, the pay gap between male and female genetic counselors reflects a broader social problem.

Methods

Approval for this study was obtained from the Cincinnati Children's Hospital Medical Center Institutional Review Board in June 2019 (Study #2019-0767).

Respondents

Our target population for this study was currently employed genetic counselors who were paid in United States dollars and earned a master's degree from an accredited genetic counseling program by July 1, 2019. Genetic counselors of all ages and of any self-identified gender were eligible to participate in this study if they met the above criteria and could read and write in English.

Instrumentation

The online survey was administered through Cincinnati Children's Hospital Medical Center's REDCap database (Harris et al., 2009). The survey consisted of five different sections: (1) demographic characteristics, which included standard items such as race and gender as well as career factors such as licensure, having an additional degree, and type of position (direct patient care, defined as a role that primarily involves counseling patients, or non-direct patient care, defined as a role that does not involve counseling patients); (2) pay information, which included current annual salary and employment status (full-time/part-time); (3) negotiation characteristics, such as how many times a respondent had negotiated for a raise and how successful they were during each attempt, and leadership experiences, which included how many leadership positions a respondent had held; (4) additional career experiences, which included whether the respondent had part-time work in the past, had any breaks in full-time employment, had taken any maternity/paternity leave, or had income outside of their genetic counseling salary (such as bonuses); (5) perception of the pay gap and attitudes about one's own salary. The survey tool can be found in the Appendix. Questions either came directly from the 2018 National Society of Genetic Counselors (NSGC) Professional Status Survey (PSS), were modified from the PSS or were researcher-generated. All questions were pretested by the first author with the rest of the research team, as well as with three members of the PSS committee who volunteered to help pretest the survey. Pretesting prompted the removal of six questions due to lack of clarity or redundancy with other questions, and also led to changes in formatting such as reordering response options.

Procedures

An invitation to participate in the survey was sent to potential respondents through the NSGC email alert. Members of NSGC were asked to complete the survey and share the survey link with

other genetic counselors, specifically male genetic counselors. To increase the number of male respondents, we employed two different techniques. First, members of this research team engaged in snowball sampling, reaching out directly to male genetic counseling colleagues. Second, we identified genetic counselors through the NSGC membership list who appeared to be male (by name, photo, or biographical information) as NSGC does not require gender to be reported by their members. Then, we sent emails directly to identified males in batches grouped by state with recipients blinded to each other. Data collection took place between June 2019 and September 2019.

Data Analysis

Data were analyzed using SAS software, version 9.4 (SAS, Cary, NC).

Descriptive statistics were used to characterize the study population. Frequency and percentage were reported for categorical variables. Median and range were used to describe continuous variables. Mean for annual salary was calculated to demonstrate similarity with published data.

To determine if our collected variables differed by gender, the first step in analysis was to assess the association of demographic characteristics, negotiation, and leadership experiences with gender. Additional career experiences, including previous part-time work, breaks in employment, maternity/paternity leave, and having salary from additional sources were also tested for association with gender. Demographic characteristics were self-reported race, ethnicity, disability status, licensure status, certification status, degrees in addition to a genetic counseling master's degree, type of position, age, year of graduation, and years of experience. Type of position was collapsed into two categories, after a small number of respondents reported a mixed position; respondents who indicated a mixed position were collapsed into direct patient care. Negotiation

was defined as how many times a respondent indicated that they had negotiated, regardless of success at that point of negotiation; respondents who reported that they negotiated six or more times were collapsed into one category and analyzed numerically as a score of six. Leadership experiences were given a score calculated by totaling the number of leadership experiences that each respondent indicated they had performed, where there were nine possible units as defined previously by the PSS (supervision of students in clinical roles, managerial/supervisory roles [non-students], research activities, community involvement/ education [non-patient outreach including volunteering], professional development/ leadership activities-local/state, professional development/leadership activities-national, expansion of services as institution, program development, or other) (NSGC, 2018, 2019). To test the association between gender and demographic variables, negotiation attempts, and leadership experience scores, we employed a chi-square test or the Fisher's exact test as appropriate for categorical variables and the Wilcoxon rank-sum for continuous variables. A p -value of <0.05 was considered statistically significant.

We then assessed the relationship between annual salary, our primary outcome variable, and all predictor variables (including gender) using univariate analyses. However, additional career experiences (previous part-time work, breaks in employment, maternity/paternity leave, and having salary from additional sources) were *not* tested for association with annual salary due to small numbers of respondents in some individual categories. We used generalized linear regression models for categorical variables and simple linear regression models for continuous variables. Salary was log-transformed in all regression models and results are reported by back-transforming salary to its original scale. A p -value of <0.05 was considered statistically significant. Variables that were found to be significantly associated with annual salary were selected for further regression modelling.

We then built three different regression models to predict annual salary: two where the study cohort was stratified by the only demographic characteristic that differed by gender (type of position: direct patient care vs. non-direct patient care), and the third for the whole study cohort where the model included the interaction term gender-position. Variables from the univariate analysis that met the threshold of significance ($p < 0.05$) were retained in the final models. Predicted salary from regression models are shown as least square means (LSM).

Differences between male and female genetic counselors in their perceptions of the pay gap and attitudes about salary were assessed using a chi-square test, but were not included in regression models, as they were not expected to be predictors of annual salary.

Results

A total of 392 surveys were completed (response rate of about 10%). Thirty-seven surveys were excluded because they provided incomplete or inaccurate pay information (e.g., answered \$190 for annual salary, $n=24$), did not report gender ($n=1$), worked part-time ($n=9$), or reported an hourly pay-scale ($n=17$). Part-time workers and those paid by the hour were excluded due to the complexity of extrapolating their responses to an equivalent full-time salary for analyses and low N in individual response categories. These exclusion reasons were not mutually exclusive and therefore a total of 355 respondents were included in data analyses.

Demographic Characteristics and Career Factors

Respondents ranged in age from 22 to 68 years (median=30 years), were predominantly female ($n=283$, 79.7%) and white ($n=331$, 93.2%). Over 50% of respondents graduated between 2014 and 2019 ($n=190$, 53.5%). Most respondents worked in direct patient care roles ($n=268$, 75.5%). Detailed respondent demographic information is reported in Table 1.

Other Career Experiences, Negotiation Attempts, and Leadership Experiences

The top three areas of clinical practice reported were cancer (n=120, 33.8%), prenatal (n=51, 14.3%), and pediatrics (n=33, 9.3%). Respondents primarily worked in university medical centers (n=123, 34.6%), commercial diagnostic laboratories (n=61, 17.2%), or public hospitals (n=56, 15.8%). Most respondents negotiated between one and five times over their career (n=279, 78.6%) and 24 had negotiated six or more times (6.8%). All respondents had a leadership experience score of at least one and a majority of respondents had a score of three or more (n=241, 67.9%). Supervision of students in clinical roles was the most common leadership experience (n=255, 71.8%), followed by research activities (including advising of students/trainees) (n=208, 58.6%), and community involvement/education (non-patient outreach including volunteering) (n=175, 49.3%) (Table 5). Most of our respondents had not had breaks in full-time employment, had not taken maternity or paternity leave, had not previously worked part-time, and did not have earnings in addition to their genetic counseling specific salary. There was no difference in the number of these experiences reported by our male and female respondents (Table 2).

Distribution of Demographic Characteristics, Negotiation Attempts, and Leadership Score

The majority of our demographic characteristics were not distributed differently between male and female respondents (race, disability status, licensure status, certification status, degrees in addition to a genetic counseling master's degree, type of position, age, year of graduation, and years of experience) (Table 1). The rate at which our respondents negotiated did not differ between males and females ($p=0.18$) nor did leadership experience score ($p=0.77$). However, type of position differed between our male and female respondents ($p=0.02$) as well as ethnicity ($p=0.03$) (Table 1).

Identified Pay Gap in Cohort's Reported Salary

Mean annual reported salary differed by position and indicated similar gaps identified by previous studies. We identified an average pay gap of \$4,048 between male and female genetic counselors who work in direct patient care positions. We also identified an average pay gap of \$20,888 between male and female genetic counselors who work in non-direct patient care positions (Table 3).

Association of Demographic Characteristics, Negotiation Attempts, and Leadership Score with Annual Salary

Through univariate analysis, we identified a significant relationship between annual salary and many of our variables. We identified a significant difference in annual salary between male and female respondents who worked in different types of positions (non-direct patient care vs. direct patient care, $p < 0.001$), between those genetic counselors who had a degree in addition to a genetic counseling master's degree and those who did not ($p = 0.01$), between those with licensure and those without licensure ($p = 0.04$), as well as a difference in salary between those who were board certified and those who were not ($p < 0.001$). Our simple linear regression models indicated that number of negotiations, leadership experience score, and years of experience all increase annual salary (5.52%, 3.7%, and 1.7% per unit, respectively, $p < 0.001$) (Table 4).

Negotiation and leadership were the strongest predictors without an interaction. Baseline salary at 0 negotiation attempts was \$86,322 for female genetic counselors and \$99,025 for male genetic counselors. At a mean of 2.3 negotiation attempts, predicted salary for females is \$93,998 versus \$105,746 for males (Figure 2a).

Baseline salary at a leadership experience score of 0 was \$86,884 for female genetic counselors and \$97,494 for male genetic counselors. Predicted salary increased 3.6% per unit

increase in leadership experience score ($p<0.001$), and no interaction was identified between gender and leadership experience score. With a mean leadership experience score of 3.7, predicted salary for female genetic counselors is \$97,820 versus \$112,215 for male genetic counselors (Figure 2b).

Mean Annual Salary as Predicted by Multivariate Regression Models

Direct Patient Care Multivariate Regression Model: In the stratified model for direct patient care positions, gender itself was not a significant predictor of annual salary. However, additional degree ($p=0.03$), leadership experience score ($p=0.002$), total years of experience ($p<0.001$), and negotiation attempts ($p=0.01$) all remained significant. Genetic counselors in direct patient care positions with an additional degree had a predicted annual salary of \$88,292 compared to \$82,180 when they did not have an additional degree ($p=0.03$). Negotiation increased annual salary by 1.94% per attempt. Leadership experience score increased annual salary by 1.83% per unit. Years of experience increased annual salary by 0.96% per year. This stratified model for direct patient care was able to account for 39% of the annual salary variability within direct patient care positions only ($R^2=0.39$).

Non-direct Patient Care Multivariate Regression Model: Within the stratified model for non-direct patient care positions, gender and years of experience were significant (both at $p<0.001$); all other variables became non-significant predictors of annual salary. Male genetic counselors were predicted to earn \$125,653 and female genetic counselors were predicted to earn \$103,648. Years of experience increased salary by 1.2% per year. The R^2 value for this model of non-direct patient care was 0.34, indicating that this model predicts 34% of the variability within non-direct patient care positions only.

Multivariate Regression Model with Interaction Term: In the multivariate regression model with the gender-position interaction term, all variables remained significant at the established threshold of $p < 0.05$ except certification status. These significant variables were years of experience ($p < 0.001$), leadership experience score ($p = 0.002$), negotiation attempts ($p < 0.001$), and licensure status ($p = 0.002$). This final model accounted for 54% of the variability in annual salary ($R^2 = 0.54$) where the interaction between gender and position is significant at $p < 0.001$ and all other variables were held constant. As predicted by this multivariate regression model, there was gendered pay gap in direct patient care positions of just over \$1,500 and a gendered pay gap in non-direct patient care positions of nearly \$24,000 (Figure 1).

Perception of the Pay Gap and Attitudes About One's Own Salary

Female respondents indicated that they believe that there is a pay gap between male and female genetic counselors more frequently than male genetic counselors (61.1% [$n = 171$] vs. 44.3% [$n = 31$], $p = 0.01$). Among those who felt there was a pay gap, the most frequently selected pay gap by female respondents (out of four choices) was between \$5,000 and \$9,999 ($n = 78$, 48.1%), whereas the most frequently selected pay gap by male respondents was between \$0 and \$4999 ($n = 12$, 44.4%). This difference was not statistically significant ($p = 0.45$).

Most respondents indicated that they were happy with their current salary ($n = 268$, 75.5%) and that their salary represents the value of their work ($n = 232$, 65.4%). The majority also agreed that their salary is similar to that of other genetic counselors in similar positions ($n = 219$, 61.7%). Most also indicated that they believed leadership opportunities are available to male and female genetic counselors equally ($n = 282$, 79.4%). However, male genetic counselors were more likely to indicate a belief that leadership opportunities were available equally than female genetic counselors (88.9% vs 79.4%, respectively, $p = 0.045$). Of the 60 female respondents who felt

leadership opportunities are available unequally, 98.3% (n=59) indicated that they believe males have more leadership opportunities. The 8 male respondents who felt leadership opportunities are available unequally were evenly split, with four indicating that they believe females have more opportunities and four indicating males have more opportunities.

Discussion

The Pay Gap

We identified an average gendered pay gap of \$4,048 in direct patient care positions and an average gendered pay gap of \$20,788 in non-direct patient care positions. Such a pay gap is similar to previous findings by the PSS (NSGC, 2018, 2019). After controlling for variables that were predictive of salary in our best-fitting multiple regression model, the gap between male and female genetic counselors in direct patient care positions shrank to \$1,552 ($p < 0.001$). In the same best-fitting model, the gap between male and female genetic counselors in non-direct patient care grew to \$23,736 ($p < 0.001$). In our study, male genetic counselors earn more than female genetic counselors for their negotiation attempts even though men and women in our sample negotiated at about the same rate. The same is true for leadership experiences, with male genetic counselors earning more than female genetic counselors who hold the same number of leadership positions. No demographic characteristics were found to be different between our male and female respondents, except for position type.

The Process of Devaluation and Career Experiences

Since we did not identify significant differences in demographic characteristics between male and female respondents, it is likely there are additional tangible or societal factors either within, or being imposed upon, the genetic counseling profession that are enabling male genetic

counselors to earn more than their female counterparts. For example, genetic counseling may be seen as a feminized field. Feminization of a field, either by increasing the number of women in the field or coding the field as “women’s work” changes the way that people perceive it. Through a process called devaluation, the field is perceived as less skillful, less complex, and less demanding (Judge & Livingston, 2008; Levanon, England, & Allison, 2009). Even though genetic counseling has been cited as a science, technology, engineering, and mathematics (STEM) field (Hoskovec, 2014) and genetic counselors have extensive training in human and molecular genetics, genetic counseling is often regarded as a helping profession, which in turn codes it as a “feminized” field (Gerard et al., 2018).

Other studies have found that men in feminized fields tend to fare better, in terms of salary and advancement, than their female counterparts (Budig, 2002; Greene, El-Banna, Briggs, & Park, 2017) and that men have faster salary growth than women in predominantly female fields, such as nursing (Budig, 2002). Furthermore, as the proportion of women in a field increases, the within-occupation pay disparity between men and women increases as well (Kim, 2018). Since men make up 5% of the field of genetic counseling, it is possible that the pay gap between male and female genetic counselors can be explained in part by its feminine-coded job status and the numerical underrepresentation of males.

Negotiation

Additionally, while male and female genetic counselors in our study reported negotiating at similar rates, male genetic counselors earned more for their negotiation attempts. In general, across all fields, men are more successful negotiating salary increases than women, which translates to higher overall salary for men (Artz et al., 2018). Women may actually be penalized by employers, or at least perceive that they would be penalized, if they were to negotiate (Amanatullah & Morris,

2010; Bowles et al., 2007). Others have found that women tend to estimate their own value based on their perception of what other women earn; by lowering their pay expectations, women reduce their entitlement to higher starting salary and ability to later negotiate raises (Alkadry & Tower, 2011; Barron, 2003). Female genetic counselors may be unaware of their earning potential, as they compare themselves to other women in the field. Interestingly, the majority of our respondents reported that they were happy with their current salary and that they feel their salary represents the value of their work, regardless of position or gender, which is in contrast to the 2018 PSS finding that respondents in direct patient care positions were less satisfied with their pay and advancement opportunities than those in non-direct patient care positions (NSGC, 2018). However, since males in general perceive their own value to be high (Alkadry & Tower, 2011; Bowles et al., 2007; Hogue, DuBois, & Fox-Cardamone, 2010), male genetic counselors may actually be asking for larger increases in salary, and may be more likely to actually receive those higher asks. In this cohort, men and women earned the same percentage increase in salary per negotiation, but males started out at a higher salary *even when* they had not attempted any negotiations. Since the majority of respondents had graduated within the last five years, the difference found even with no negotiation could indicate a higher starting salary for male genetic counselors in general. If male genetic counselors generally have a higher starting salary, there would be long-term impacts on salary inequity over time, as the percent increase per negotiation becomes a compounded effect. It may therefore be important for genetic counseling trainees, especially female trainees, to have formalized training and practice in negotiation to help all genetic counselors assess and advocate for their value.

Leadership

Similar to negotiation, leadership experiences increased salary proportionally (3.7% per unit increase in leadership score). Even though male genetic counselors reported a comparable number of leadership experiences to female genetic counselors, the proportional increase in pay for each leadership experience results in a higher dollar amount increase for male genetic counselors due to their underlying base pay already being higher. It is possible that female genetic counselors have less access to, or exercise less, workplace authority, defined as “the capacity to exercise authority over organizational resources and coworkers” (Huffman & Cohen, 2004, p. 121) than males. Workplace authority has been shown to increase earnings and has also been shown to be distributed unequally amongst men and women (Alkadry & Tower, 2011; Huffman & Cohen, 2004). Male genetic counselors having more workplace authority than female genetic counselors may partially explain why men are earning more for their leadership experiences. Female genetic counselors potentially having *less* workplace authority is also reflected in the fact that about one fifth of our female respondents indicated that they believe males have more opportunities for leadership than females in genetic counseling.

Although negotiation and leadership experiences explain some of the differences in pay between male and female genetic counselors, much of the variation in salary remains unidentified. Our best fitting model, which included negotiation and leadership, as well as years of experience, licensure, and additional degrees, indicated that gender and position are strongly entwined. This model did not include certification as a significant predictor because the vast majority of genetic counselors are board certified and therefore the variation explained by certification became negligible in the context of other predictive variables. In this final model, the gendered pay gap in direct patient care positions became smaller than previously defined in the PSS, while the pay gap

in non-direct patient care positions became larger than previously defined in the PSS (NSGC, 2018, 2019).

The Interaction Between Position, Gender, and Salary

Since there was a significant interaction between position and gender, and men go into non-direct patient care at slightly higher rates than women, it is difficult to tease out what exactly is causing the exaggerated inequity. Explanation for the gendered pay gap in non-direct patient care roles may be complex and plentiful. It is possible that non-direct patient care roles embody more masculine values, shifting the identity away from that of a “helping” profession. Though genetic counselors in non-direct patient care roles utilize many of the same skills as their colleagues in direct patient care positions, the focus of their scope of practice moves away from an emphasis on psychosocial counseling (McWalter et al., 2018), which may impact external views of “helping” characteristics. Additionally, there may be less formality or organizational structure in commercial non-direct patient care positions compared to direct patient care positions where genetic counselors may be assigned a “salary band” of, for example, Genetic Counselor I, II, or III depending on years of experience and other factors. Therefore, it is possible that genetic counselors in non-direct patient care positions have more opportunities and flexibility to negotiate, which may disadvantage female genetic counselors. Genetic counselors in non-direct patient care positions may also have jobs that confer additional titles or roles, such as sales, marketing, and variant curation which may be related to different pay scales in general.

Regardless of type of position, paying female genetic counselors less than their male counterparts represents not only a social dilemma, but a tangible economic one as well. In the general US population, women across professions would have produced almost \$300 billion more in 2017 if they received equal pay (Fredrickson, 2018). Since genetic counseling has such a high

proportion of women in the field, the pay gap between male and female genetic counselors reflects a broader social problem, one not only affecting the counselors themselves, but their children and their community.

Study Limitations

A major limitation to this study is the small sample size (355) and relatively low response rate (10%). However, our sample is generally representative of the genetic counseling field as demographic distributions, particularly for predictive variables (additional degree, licensure, certification, and position), are not different than the those of the 2018 or 2019 PSS respondents (Supplemental Tables 1 and 2). Years of experience in the PSS are reported relative to a specific area of practice, whereas years of experience in this study encompassed each respondent's entire career and therefore comparisons of that variable cannot be performed. Additionally, in order to enrich our sample for males, members of the research team directly contacted male genetic counselors known to them, which could have introduced bias by increasing the number of *experienced* male respondents. However, almost two-thirds of male respondents completed the survey after targeted emailing of males by state.

Further, due to the smaller sample size of this study and the general homogeneity of the genetic counseling professional, additional demographic factors that may impact salary could not be analyzed. For example, race and gender have been shown to have an intersectional impact on earnings (Fontenot et al., 2018; Hegewisch, 2018) yet our cohort overwhelmingly self-identified as female and white. We simply were not able to meaningfully capture the variability within gender, race, disability, and many other demographic categories.

Additional response categories also had too few respondents to include within the analyses of this study but are important for larger studies to pursue. During the development of our data

collection tool, previous part-time work, time away from employment, and maternity/paternity leave were all identified as possible factors affecting salary (Budig & England, 2001; Juhn & McCue, 2017; Kahn, García-Mangano, & Bianchi, 2014). However, many of the respondents indicated that they never had experienced these situations, possibly due the fact that our cohort was skewed slightly younger than respondents to both the 2018 and 2019 PSS (Supplemental Table 2). Thus, the impact of these additional experiences on salary differences could not be measured within this study. Since the final predictive model in this study only predicted 54% of variability, these unanalyzed variables could account for some of the unmeasured variability as genetic counselors continue through their career and should be explored further in future research.

Conclusions

The pay gap between male and female genetic counselors appears early in genetic counselors' careers and increases over time, indicating that male genetic counselors may be experiencing a glass escalator effect. Our respondents negotiated at the same rate and held the same number of leadership positions. Additionally, none of the demographic characteristics found to affect annual salary were distributed differently between our male and female respondents, *except for position*. The pay gap is highly exaggerated within non-direct patient care positions and shrinks drastically within direct patient care positions. Our best fitting model controlled for the gender-position interaction term yet was only able to predict about half of the variability in salary. Based on the large portion of variability that has yet to be identified, there must be something inherent within non-direct patient care positions that is giving male genetic counselors a significant salary advantage over their female colleagues.

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Tables and Figures

TABLE 1: Respondents' Demographic Characteristics^a, Negotiation Attempts^b, and Leadership Experience Scores^c as Distributed by Self-Reported Gender

	Male, N (%)		Female, N (%)		P-value ^d
	Total N=72		Total N=283		
Race ^e					
White or Caucasian	64 (88.8)		267 (94.3)		0.10 ^f
Asian	5 (6.9)		11 (3.9)		
Asian Indian	2 (2.8)		5 (1.8)		
Black or African American	1 (1.4)		3 (1.1)		
Other	1 (1.4)		1 (0.4)		
Ethnicity					
Hispanic or Latino/a	4 (5.6)		3 (1.1)		0.03
Not Hispanic or Latino/a	68 (94.4)		278 (98.2)		
Disability status					
Identify as having a disability	1 (1.4)		11 (3.9)		0.47
Do not identify as having a disability	71 (98.6)		272 (26.1)		
Licensure					
Licensed	39 (54.2)		171 (60.4)		0.33
Not licensed	33 (45.8)		112 (39.6)		
Certification					
Certified	65 (90.3)		259 (91.5)		0.67
Not Certified	7 (9.7)		23 (8.1)		
Degrees in addition to genetic counseling MS					
Yes	10 (13.9)		34 (12.0)		0.67
No	62 (86.1)		249 (88.0)		
Type of patient care position					
Direct	47 (65.3)		221 (78.1)		0.02
Non-direct	25 (34.7)		61 (21.6)		
	median	range	median	range	
Age (years)	32	23-66	30	22-68	0.08
Year of graduation	2014	1975-2019	2014	1979-2019	0.59
Years of experience	5.6	0-43.9	5.0	0-40.0	0.35
Negotiation attempts	2	0-35	2	0-20	0.18
Leadership experience score	3	1-8	3	1-9	0.77

^aRespondents were able to choose not to respond to each demographic question.

^bNegotiation attempts were self-reported by respondents and included here regardless of level of success.

^cLeadership experience score was calculated by totaling the number of leadership experiences that each respondent indicated they had performed, where there were nine possible (supervision of students in clinical roles, managerial/supervisory roles [non-students], research activities, community

involvement/education [non-patient outreach including volunteering], professional development/leadership activities-local/state, professional development/leadership activities-national, expansion of services as institution, program development, or other).

^dThe distributions of demographic characteristics, negotiation attempts, and leadership experience scores were compared between male and female respondents. *P*-values were obtained by employing a chi-squared test or Fisher's exact test as appropriate for categorical variables and a Wilcoxon rank-sum test for continuous variables.

^eRespondents could select more than one response.

^f Race was collapsed into two categories, white and non-white, for analyses.

TABLE 2: Additional Career Experiences, as Distributed by Self-Reported Gender

Additional Information ^a	Male, N (%) Total=72	Female, N (%) Total=283	<i>P</i> -value ^b
Had a break in full-time employment			
Yes	6 (8.3)	36 (12.7)	0.30
No	66 (91.7)	247 (87.3)	
Had maternity or paternity leave			
Yes	12 (16.6)	74 (26.1)	0.11
No	58 (80.5)	206 (72.7)	
Had worked part-time previously			
Yes	3 (4.2)	23 (8.1)	0.32
No	69 (95.8)	258 (91.1)	
Had additional earnings			
Yes	18 (25.0)	63 (22.3)	0.62
No	54 (75.0)	220 (77.7)	

^a Respondents could choose not to respond.

^b A chi-square test was used to determine differences between male and female genetic counselors' responses.

TABLE 3: Mean Annual Salary^a of Full-time Genetic Counselors as Reported in this Study and in Previous Studies, Separated by Position Type

	NSGC PSS 2018	NSGC PSS 2019	This Study
Direct Patient Care			
Female	\$82,048	\$80,954	\$83,861
Male	\$84,764	\$84,920	\$87,909
Non-Direct Patient Care			
Female	\$103,855	\$108,442	\$107,691
Male	\$121,573	\$132,161	\$128,579

^aReported annual salary

TABLE 4: Association of Respondents' Demographic Characteristics, Negotiation Attempts^a, and Leadership Experience Scores^b with Annual Salary

Categorical variables	Annual Salary^c (95% lower confidence interval - upper confidence Interval)	P-value^d
Self-identified gender		<0.001
Female	\$86,635 (84,273 - 89,062)	
Male	\$97,626 (92,421 - 103,124)	
Licensure		0.04
Licensed	\$90,762 (87,856 - 93,763)	
Not licensed	\$85,937 (82,637 - 89,368)	
Certification		<0.001
Certified	\$90,180 (87,884 - 92,535)	
Not Certified	\$75,296 (69,178 - 81,955)	
Degrees in addition to genetic counseling MS		0.01
Yes	\$96,565 (89,956 - 103,661)	
No	\$87,707 (85,399 - 90,077)	
Type of patient care position		<0.001
Direct	\$83,031 (80,968 - 85,148)	
Non-direct	\$109,614 (104,851 - 114,594)	
Continuous variables	% increase in annual salary per unit	
Years of experience	1.7	<0.001
Negotiation attempts	5.5	<0.001
Leadership experience score	3.7	<0.001

^a Negotiation attempts were self-reported by respondents and included here regardless of level of success. For analysis, respondents who had negotiated six or more times were collapsed into one category and scored numerically as 6.

^bLeadership experience score was calculated by totaling the number of leadership experiences that each respondent indicated they had performed, where there were 9 possible (supervision of students in clinical roles, managerial/supervisory roles [non-students], research activities, community involvement/education [non-patient outreach including volunteering], professional development/leadership activities-local/state, professional development/leadership activities-national, expansion of services as institution, program development, or other.

^cAnnual salary is shown as least square means (LSM).

^dGeneralized linear regression models were used to evaluate the association of categorical variables with annual salary and simple linear regression model were used to evaluate the association of continuous variables with annual salary.

TABLE 5: Frequency of Leadership Experiences Reported by Respondents

Leadership Experience^a	N (%)
Supervision of students in clinical roles	255 (71.8)
Research activities (including advising of students/trainees)	208 (58.6)
Community involvement/education (non-patient outreach including volunteering)	175 (49.3)
Expansion of Services at Institution	163 (45.9)
Professional development/leadership activities - local/state	140 (39.4)
Program development	139 (39.2)
Professional development/leadership activities - national	101 (28.5)
Managerial/supervisory roles (non-students)	98 (27.6)
Other	15 (4.2)

^aResponse categories were not mutually exclusive.

SUPPLEMENTAL TABLE 1: Respondents' Demographic Characteristics Compared^a to the 2018 and 2019 National Society of Genetic Counselor's Professional Status Survey for Which Number of Respondents Was Reported

Demographic Characteristics	This study N (%) Total N=355	2018 PSS N (%) Total N=2543	P-value 2018	2019 PSS N (%) Total N=2438	P-value 2019
Race					
American Indian/Alaskan Native	0 (0)	6 (0)	0.57	9 (0.4)	0.72
Asian	16 (4.5)	126 (5)		121 (5)	
Asian Indian	7 (2.0)	64 (3)		67 (3)	
Black/African American	4 (1.1)	28 (1)		30 (1)	
Native Hawaiian/Pacific Islander	0 (0)	4 (0)		2 (0.1)	
White/Caucasian	331 (93.2)	2333 (92)		2229 (90)	
Other	2 (0.6)	35 (1)		29 (1)	
Prefer Not to Respond	0 (0)	14 (1)		5 (0.2)	
Ethnicity					
Hispanic or Latino/a	7 (2)	54 (2)	0.86	57 (2)	0.72
Non-Hispanic	346 (97.5)	2489 (98)		2431 (98)	
Disability					
Identify as having a disability	12 (3.4)	37 (1)	0.008 ^b	46 (2)	0.07
Do not identify as having a disability	343 (96.6)	2506 (99)		2392 (98)	
Additional degree					
Yes	44 (12.4)	349 (14)	0.49	301 (12)	0.98
No	311 (87.6)	2194 (86)		2137 (88)	

^aThe distributions of this study's demographic were compared to the distributions reported in the 2018 and 2019 NSGC PSS. *P*-values were obtained by employing a chi-squared test or Fisher's exact test as appropriate, and separate tests were run for each year.

^bThe proportion of respondents in this study who identified as having a disability is higher than in the 2018 PSS. However, this variable was not predictive of salary and was not used for regression modelling.

SUPPLEMENTAL TABLE 2: Respondent's Demographic Characteristics Relative to the 2018 and 2019 National Society of Genetic Counselor's Professional Status Survey^a

Demographic Characteristics	This Study %	2018 PSS %	2019 PSS %
Licensure			
Licensed	59.2	54	57
Not Licensed	40.8	46	43
Certification			
Certified	91.5	93	96
Not Certified	8.5	7	4
Position			
Direct	75.5	75	75
Non-direct	24.5	25	25
Age			
Percent of respondents under age 40	80.7	70	70
Range (years of age)	22-68	20-69	20-69
Year of graduation			
Percent of respondents who graduated after 2010	66.8	51	56
Range (years)	1975-2019	1980-2017	1970-2018

^aOnly percentages of respondents for licensure, certification, position, age, and year of graduation are reported in the PSS in 2018 or 2019, not number of respondents.

FIGURES 1a and 1b: Predicted Effect of Negotiation Attempts and Leadership Experiences on Salary Through Univariate Regression^a

a.

b.

^aFor figure 1a, $\beta=0.0559$, $p<0.0011$ and for figure 1b, $\beta=0.0361$, $p<0.001$).

FIGURE 2: Significant Interaction Between Gender and Position in Multivariate Regression Modeling of Annual Salary^a

^a $R^2=0.54$, where the interaction term position-gender is significant at $p<0.001$. All other variables (licensure status, additional degree, years of experience, negotiation attempts, and leadership experience score) were held constant. Annual salary (in dollars) is shown as least square means (LSM).

Appendix

Survey Tool

Confidential

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Genetic Counseling Salary Trends

Please complete the following. Your participation is greatly appreciated.

You may note that some words are underlined with a dashed line. You may hover over these words for a definition.

Thank you!

Demographic Information	
Are you currently a student enrolled in a genetic counseling Master's degree program?	☐ Yes ☐ No
Did you graduate from a genetic counseling program?	☐ Yes ☐ No
In what year did you graduate from a genetic counseling program?	_____
Are you currently retired or unemployed?	☐ Yes ☐ No
Do you work remotely as part of your current position?	☐ Yes ☐ No (If you have more than one position, please answer for your primary position.)
You indicated that you work remotely. Do you earn US dollars?	☐ Yes ☐ No

You indicated that you work remotely. As of 06/01/19, in which state was your company headquartered?

- ☐ Alabama
- ☐ Alaska
- ☐ Arizona
- ☐ Arkansas
- ☐ California
- ☐ Colorado
- ☐ Connecticut
- ☐ Delaware
- ☐ Florida
- ☐ Georgia
- ☐ Hawaii
- ☐ Idaho
- ☐ Illinois
- ☐ Indiana
- ☐ Iowa
- ☐ Kansas
- ☐ Kentucky
- ☐ Louisiana
- ☐ Maine
- ☐ Maryland
- ☐ Massachusetts
- ☐ Michigan
- ☐ Minnesota
- ☐ Mississippi
- ☐ Missouri
- ☐ Montana
- ☐ Nebraska
- ☐ Nevada
- ☐ New Hampshire
- ☐ New Jersey
- ☐ New Mexico
- ☐ New York
- ☐ North Carolina
- ☐ North Dakota
- ☐ Ohio
- ☐ Oklahoma
- ☐ Oregon
- ☐ Pennsylvania
- ☐ Rhode Island
- ☐ South Carolina
- ☐ South Dakota
- ☐ Tennessee
- ☐ Texas
- ☐ Utah
- ☐ Vermont
- ☐ Virginia
- ☐ Washington
- ☐ West Virginia
- ☐ Wisconsin
- ☐ Wyoming

You indicated you do not work remotely. As of 06/01/19, what was the state of your place of employment?

- ☐ Alabama
- ☐ Alaska
- ☐ Arizona
- ☐ Arkansas
- ☐ California
- ☐ Colorado
- ☐ Connecticut
- ☐ Delaware
- ☐ Florida
- ☐ Georgia
- ☐ Hawaii
- ☐ Idaho
- ☐ Illinois
- ☐ Indiana
- ☐ Iowa
- ☐ Kansas
- ☐ Kentucky
- ☐ Louisiana
- ☐ Maine
- ☐ Maryland
- ☐ Massachusetts
- ☐ Michigan
- ☐ Minnesota
- ☐ Mississippi
- ☐ Missouri
- ☐ Montana
- ☐ Nebraska
- ☐ Nevada
- ☐ New Hampshire
- ☐ New Jersey
- ☐ New Mexico
- ☐ New York
- ☐ North Carolina
- ☐ North Dakota
- ☐ Ohio
- ☐ Oklahoma
- ☐ Oregon
- ☐ Pennsylvania
- ☐ Rhode Island
- ☐ South Carolina
- ☐ South Dakota
- ☐ Tennessee
- ☐ Texas
- ☐ Utah
- ☐ Vermont
- ☐ Virginia
- ☐ Washington
- ☐ West Virginia
- ☐ Wisconsin
- ☐ Wyoming

In which state do you currently live?

- ☐ Alabama
- ☐ Alaska
- ☐ Arizona
- ☐ Arkansas
- ☐ California
- ☐ Colorado
- ☐ Connecticut
- ☐ Delaware
- ☐ Florida
- ☐ Georgia
- ☐ Hawaii
- ☐ Idaho
- ☐ Illinois
- ☐ Indiana
- ☐ Iowa
- ☐ Kansas
- ☐ Kentucky
- ☐ Louisiana
- ☐ Maine
- ☐ Maryland
- ☐ Massachusetts
- ☐ Michigan
- ☐ Minnesota
- ☐ Mississippi
- ☐ Missouri
- ☐ Montana
- ☐ Nebraska
- ☐ Nevada
- ☐ New Hampshire
- ☐ New Jersey
- ☐ New Mexico
- ☐ New York
- ☐ North Carolina
- ☐ North Dakota
- ☐ Ohio
- ☐ Oklahoma
- ☐ Oregon
- ☐ Pennsylvania
- ☐ Rhode Island
- ☐ South Carolina
- ☐ South Dakota
- ☐ Tennessee
- ☐ Texas
- ☐ Utah
- ☐ Vermont
- ☐ Virginia
- ☐ Washington
- ☐ West Virginia
- ☐ Wisconsin
- ☐ Wyoming

(Your answers are kept confidential and will not be linked to other answers in this survey.)

With which of the following do you identify?

- ☐ Female
- ☐ Male
- ☐ Non-binary/third gender
- ☐ Prefer to self-describe
- ☐ Prefer not to respond

You indicated that you prefer to self describe your gender. Please do that here.

What was your age as of 06/01/19?

(Please use whole numbers only.)

What is your ethnicity?

- ☐ Not Hispanic or Latino/a
- ☐ Hispanic or Latino/a
- ☐ Prefer to self-describe
- ☐ Prefer not to respond

You indicated that you prefer to self describe your ethnicity. Please do that here.

What is your race?

- ☐ American Indian or Alaskan Native
 - ☐ Asian
 - ☐ Asian Indian
 - ☐ Black or African American
 - ☐ Native Hawaiian or other Pacific Islander
 - ☐ White or Caucasian
 - ☐ Prefer to self-describe
 - ☐ Prefer not to respond
- (Please select all that apply)

You indicated that you prefer to self describe your race. Please do that here.

Do you identify yourself as being part of a disability community?

- ☐ Yes
- ☐ No
- ☐ Prefer not to respond

As of 06/01/19, did you hold any of the following degrees in addition to your genetic counseling degree?

- ☐ BS/BA
 - ☐ BSN/RN
 - ☐ Other nursing
 - ☐ JD
 - ☐ MBA
 - ☐ MD
 - ☐ MPAS
 - ☐ MPH
 - ☐ MS/MA (non genetic-counseling)
 - ☐ MSN
 - ☐ MSW/MSSW
 - ☐ PhD
 - ☐ Other
 - ☐ Currently in advanced degree program
 - ☐ None of the above
- (Please select all that apply)

You indicated that you hold an additional degree not listed. Please describe that here.

As of 06/01/19, what certifications did you hold?

- ☐ CGC
 - ☐ CCGC
 - ☐ Other
 - ☐ Not currently board certified
- (Certification is separate from licensure. Additional questions will be asked about licensure later in the survey.)

You indicated that you hold another certification not listed. Please describe that here.

Did you hold a genetic counseling license as of 06/01/19?

- ☐ Yes - full
☐ Yes - provisional/temporary
☐ No - licensure is not available in my state/province
☐ No - licensure is available but I do not have it

Indicate the choice that most closely fits your official job classification as of 06/01/19.

- ☐ Account Executive
☐ Assistant Director
☐ Clinical Coordinator
☐ Director/Clinical Director/Executive Director
☐ Genetic Consultant
☐ Genetic Counselor
☐ Genetic Associate
☐ Genetic Counseling Training Program Assistant
Director/Coordinator
☐ Genetic Counseling Training Program Director
☐ Genetic Nurse Counselor/Nurse Geneticist
☐ Genetic Services Manager
☐ Genetic Social Worker
☐ Genetic Specialist/Medical Specialist
☐ Laboratory Counselor/Coordinator/Support
☐ Lecturer
☐ Manager
☐ Medical Geneticist
☐ Medical Science Liaison
☐ Patient Care Liaison
☐ Product Manager/Product Specialist
☐ Professor/Instructor/Assistant Professor/Associate Professor
☐ Project Manager/Project Director
☐ Public Health Worker (incl. State Genetic Coordinators)
☐ Research Scientist/Assistant/Associate
☐ Research/Study Coordinator
☐ Senior Genetic Counselor/Supervisor/Coordinator
☐ Other

You indicated that your job classification is another not listed. Please describe that here.

As of 06/01/19 what was your primary work setting (in other words, what type of company are you employed by for your primary position)?

- ☐ Bioinformatics Company
- ☐ Diagnostic Laboratory - Non-commercial, academic
- ☐ Diagnostic Laboratory - Commercial, academic
- ☐ Diagnostic Laboratory - Commercial, non-academic
- ☐ Federal/State/County Office
- ☐ Government Organization or Agency
- ☐ Health Advocacy Organization
- ☐ Health Maintenance Organization
- ☐ Internet/Website Company
- ☐ Marketing/Advertising Company
- ☐ Not-for-profit Organization (not otherwise specified)
- ☐ Outreach/Satellite/Field Clinic
- ☐ Pharmaceutical Company
- ☐ Physician's Private Practice
- ☐ Private Practice - self-employed
- ☐ Private Hospital/Medical Facility
- ☐ Professional Organization
- ☐ Public Hospital/Medical Facility
- ☐ Research Development/Biotechnology Company
- ☐ Telegenetics Company
- ☐ University Medical Center
- ☐ University/Non-medical Center
- ☐ Other

You indicated that the type of company that you work for is another not listed. Please describe that here.

How would you classify/describe your current position?

- ☐ A direct patient care position.
 - ☐ A non-direct patient care position.
 - ☐ A mixed position.
- (If you have more than one position, please answer for your primary position.)

What is your current primary area of practice?

- ☐ Administration
- ☐ Cancer
- ☐ Cardiology
- ☐ Education; Public or Professional
- ☐ General Genetics
- ☐ Genomic Medicine
- ☐ Genomic Profiling/Personal Genomics
- ☐ Hematology
- ☐ ART/IVF
- ☐ Laboratory Operations
- ☐ Metabolic Disease (incl. Lysosomal Storage)
- ☐ Neurogenetics
- ☐ Newborn Screening
- ☐ Pediatrics
- ☐ PGD
- ☐ Pharmacogenetics
- ☐ Preconception/Reproductive Screening
- ☐ Prenatal
- ☐ Psychiatric
- ☐ Public Health
- ☐ Clinical Research
- ☐ Specialty Disease
- ☐ Other
- ☐ I do not consider myself to have an area of practice

You indicated that your primary area of practice is another not listed. Please describe that here.

How many total years of experience in the field of genetic counseling do you have? (Please indicate years, months)

How many different positions have you held since graduation?

As of 06/01/19, how long had you been employed at your current position? (Please indicate years, months)

(If you started a new position on or after 06/01/19, please answer the question for the job you had as of 06/01/19)

Questions About Salary

PLEASE NOTE: All answers will be kept strictly confidential. To ensure confidentiality when publishing data from this survey, no identifiers will be used, and results will not be reported when N < 5.

Considering your employment only in the field of genetic counseling, how would you best categorize your employment status as of 06/01/19?

- ☐ Full-time
☐ Part-time

Considering your employment only in the field of genetic counseling, how many hours per week do you typically work?

(Please approximate using decimal places to indicate partial hours.)

Please indicate the payment classification that fits your genetic counseling job best as of 06/01/19.

- ☐ Hourly
☐ Salaried
☐ Other
☐ I do not know

You indicated that your payment classification is another not listed. Please describe that here.

What is your hourly rate as of 06/01/19, rounded to the nearest whole dollar?

(If your rates are variable, please do your best to estimate your typical/average rate. Please only report your genetic counseling job-specific income.)

You answered that you earn \$[sal_hrly] per hour, are you sure? If not, please go back and change the amount you entered.

What was your starting hourly rate at your current position?

You answered that your starting hourly rate was \$[sal_hrstart], are you sure? If not, please go back and change the amount you entered.

What is your current gross yearly salary?

(Please only report your genetic counseling
job-specific income, excluding any bonuses or
commissions.)

You answered that your current gross yearly salary is \$[sal_sal], are you sure? If not, please go back and change the amount you entered.

What was your starting gross yearly salary at your
current position?

You answered that your starting gross yearly salary was \$[sal_salstart], are you sure? If not, please go back and change the amount you entered.

In addition to your genetic counseling job-specific
income, did you have any additional income?

☐ Yes
☐ No
(Additional income is income that is not your
direct hourly or salaried wage.)

From which of the following did you receive the
additional income?

- ☐ Bonus or commission
☐ Advisory Board
☐ Consulting
☐ Contract Work
☐ Lecturing/Honoraria
☐ Teaching
☐ Royalties
☐ Writing
☐ Other
☐ Prefer not to respond

How much was this amount?

How much was this amount?

How much was this amount?

How much was this amount?

How much was this amount?

How much was this amount?

How much was this amount?

How much was this amount?

You indicated that you had additional income from another source not listed. Please describe here.

For the following statements, please rank how much you agree.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I am happy with my current compensation.	☐	☐	☐	☐	☐	☐
I feel that my current compensation represents the value of my work.	☐	☐	☐	☐	☐	☐
I think that my current compensation is similar to that of most other genetic counselors in similar positions.	☐	☐	☐	☐	☐	☐

You indicated that you do not agree that your current compensation is similar to that of most other genetic counselors in similar settings. Do you think your current compensation is:

☐ Lower ☐ Higher

Questions About Negotiation and Leadership

Approximately how many times in your genetic counseling career have you attempted salary negotiation? Please consider all salary negotiation attempts, including at the start of a new job and attempts within one position.

(Please estimate using whole number values. If you have not negotiated, please write 0)

When in your career did you attempt salary negotiation? How successful were you?

	Fully successful	Partially successful	Not successful	Not attempted
At the start of a new position?	☐	☐	☐	☐
At an annual review?	☐	☐	☐	☐
Another time in my position	☐	☐	☐	☐

Why did you NOT attempt salary negotiation?

- ☐ I did not want to be perceived as too demanding.
☐ I did not want to jeopardize my employment.
☐ I did not feel that I would be successful.
☐ I did not feel that I deserved an increase in pay.
☐ I did not need to negotiate as I was happy with the offer/my current salary.
☐ Other
☐ Prefer not to respond
 (Please select all that apply)

You indicated that there was another reason why you did not attempt salary negotiation. Please describe here.

Which of the following leadership experiences have you had? For each choice you indicate, additional questions will be asked.

- ☐ Supervision of students in clinical roles
- ☐ Managerial/supervisory roles (non-students)
- ☐ Research activities (including advising of students/trainees)
- ☐ Community involvement/education (non-patient outreach including volunteering)
- ☐ Professional development/leadership activities - local/state
- ☐ Professional development/leadership activities - national
- ☐ Expansion of Services at Institution
- ☐ Program development
- ☐ Other
- ☐ None of the above

How many students have you supervised in total?

(Please do your best to estimate, even if you are not sure of the exact number.)

For how many years have you supervised in total?

(Please do your best to estimate, even if you are not sure of the exact number.)

If you are currently managing, how many people do you manage in total?

(Please do your best to estimate, even if you are not sure of the exact number.)

For how many years have you managed in total?

(Please do your best to estimate, even if you are not sure of the exact number.)

How many times have you engaged in community involvement/education?

(Please do your best to estimate, even if you are not sure of the exact number.)

Which type of program development have you participated in?

- ☐ Clinic/patient-related program
- ☐ Academic Program

You indicated that you have participated in another type of leadership not listed. Please describe here.

Additional Questions About Salary

These are meant to assess employment history.

In the first part of this survey, you indicated that you work part-time. Regarding your current employment, which of the following is true?

- ☐ I prefer to work part-time
- ☐ I would prefer to work full-time

You indicated that you prefer to work part-time.
Which of the following factors make part-time work
your preferred employment?

- ☐ Personal desire for flexibility
☐ Family responsibilities
☐ Health or medical needs
☐ Other
(Please select all that apply)

You indicated that you prefer to work part time for
another reason. Please describe here.

You indicated that you would prefer to work
full-time. Which of the following factors prevent
you from holding full-time employment?

- ☐ Lack of job opportunity (e.g.: due to location)
☐ Family care - children
☐ Family care - parents/relatives
☐ Health or medical needs
☐ Burnout/fatigue
☐ Other
(Please select all that apply)

You indicated that another factor prevents you from
holding full-time employment. Please describe here.

Have you ever worked part-time in your primary
genetic counseling position in the past?

☐ Yes ☐ No

For how long did you work part-time?

Note: If there were multiple times in your genetic
counseling career when you worked part-time, please
estimate the total amount of time when part-time
work was your primary position.

(Please report in years, months)

For what reason(s) did you work part-time?

- ☐ Lack of job opportunity (e.g.: due to location)
☐ Family care - children
☐ Family care - parents/relatives
☐ Health or medical needs
☐ Burnout/Fatigue
☐ Other
(Please select all that apply)

You indicated that there was another reason why you
worked part-time in the past. Please describe here.

Did you ever have a break in employment (a time that
you did not work, either paid or unpaid, NOT
including maternity/paternity leave) during your
genetic counseling career?

☐ Yes ☐ No

How long was this break?

Note: If you have taken more than one break, please
estimate the total amount of time for all breaks.

(Please report in years, months)

For what reason did you have a break in employment?

- ☐ Lack of job opportunity (e.g.: due to location)
☐ Family care - children
☐ Family care - parents/relatives
☐ Health or medical needs
☐ Burnout/Fatigue
☐ Other
 (Please select all that apply)

You indicated that there was another reason why you had a break in employment. Please describe here.

Have you ever taken maternity or paternity leave?

☐ Yes ☐ No

You indicated that you've taken maternity or paternity leave. How long was this leave?

Note: If you have taken maternity or paternity leave more than one time, please estimate the total time for all combined leaves.

_____ (Please report in years, months)

Please rank the following in order of personal importance for accepting a job offer (1=most important, 9=least important):

	1	2	3	4	5	6	7	8	9
Salary	☐	☐	☐	☐	☐	☐	☐	☐	☐
Location	☐	☐	☐	☐	☐	☐	☐	☐	☐
Opportunity for advancement	☐	☐	☐	☐	☐	☐	☐	☐	☐
Flexibility	☐	☐	☐	☐	☐	☐	☐	☐	☐
Benefits	☐	☐	☐	☐	☐	☐	☐	☐	☐
Specialty	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reputation of the institution/company	☐	☐	☐	☐	☐	☐	☐	☐	☐
Requirements of position	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐	☐	☐

Additional Information

In your current employment, is there a defined career ladder?

☐ Yes ☐ No ☐ Not sure

Do you think that leadership opportunities are available to male and female genetic counselors equally?

☐ Yes ☐ No

To which group do you think that leadership opportunities are more available?

☐ Female genetic counselors
☐ Male genetic counselors

Do you think there is an annual salary gap between male and female genetic counselors?

☐ Yes ☐ No

How much do you think the annual salary gap is?

- ☐ \$0-\$4999 ☐ \$5000-\$9999
☐ \$10000-\$14999 ☐ \$20000 or higher

END

<https://is.gd/geneticcounselingsalarytrends>

**Thank you so much for
taking the time to
complete this survey.
Your help is greatly
appreciated!**

**In an effort to increase
our response rate, we
request that you share
the survey link with your
male colleagues.**