Factors Associated with Burnout in Clinical Genetic Counselors

Master’s Thesis

Presented to

The Faculty of the Graduate School of Arts and Sciences
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David Rintell, Ed.D., Advisor

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Master of Science
in
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by
Daniela Martiniuc

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ABSTRACT

Factors Associated with Burnout in Clinical Genetic Counselors

A thesis presented to the Graduate Program in Genetic Counseling

Graduate School of Arts and Sciences
Brandeis University
Waltham, Massachusetts

By Daniela Martiniuc

Burnout is defined by emotional exhaustion, depersonalization and reduced personal accomplishment. While it is known that genetic counselors are at moderate-to-high risk for burnout, there is limited data that identifies specific predictors of burnout in clinical genetic counselors to assist in determining those most at risk. The purpose of this study was to measure the level of burnout in practicing clinical genetic counselors, identify work-related predictors of burnout, and investigate the relationship between counselor burnout and thoughts of leaving their current job. A sample of 367 practicing clinical genetic counselors recruited through the NSGC listserv completed an anonymous, online survey containing the Maslach Burnout Inventory-Human Services Survey and questions about demographic and employment characteristics, social support, workload, and thoughts of leaving their current job. Results indicated that 52.9% of genetic counselors experience moderate-to-high levels of burnout. Ordinal logistic regression analysis yielded several significant predictors of burnout including low levels of social support ($p<.001$), greater workload ($p=.027$), younger age ($p<.001$), and marital status ($p=.033$). Chi-square analysis showed that burnout and thoughts of leaving current job
were significantly associated ($p<.001$). The results confirm that clinical genetic counselors continue to be at risk of burning out, while also providing new insights into work-related predictors of burnout. These findings convey important target areas that may be integral to a genetic counselors’ professional well-being, including receiving adequate social and administrative support. Attention to these factors are likely to reduce the risk of burnout and prevent clinical genetic counselors from leaving clinical practice.

Keywords: burnout, fatigue, genetic counseling, job stress, social support, workload
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INTRODUCTION

Research on the concept of burnout flourished in the 1970s with Freudenberger’s seminal composition on the topic. Freudenberger (1975) initially termed burnout as a state in which an individual becomes “exhausted by making excessive demands on energy, strength, or resources.” Years later, Christina Maslach described burnout as a “syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur to individuals who do ‘people work’ of some kind” (1982, p. 3). Maslach’s extensive research on burnout in the workplace culminated into developing the most widely used instrument for measuring burnout in human services professions, the Maslach Burnout Inventory-Human Services Survey (Maslach, Schaufeli, & Leiter, 2001). The model captures both the multidimensionality of burnout and its progression over time: feelings of emotional exhaustion, leads to impersonal feelings towards patients and the work environment, and possibly reduces one’s sense of accomplishment.

Burnout and potential situational contributing factors have been studied in a variety of health fields, predominately in the nursing profession (Maslach, Schaufeli, & Leiter, 2001). Maytum et al. (2004) found increased levels of burnout among nurses working with children with chronic conditions and their families. Burnout was associated with stress related to work conditions and a lack of support from supervisors. Additional predictors of burnout included improper staffing, excessive paperwork, and workload. Many other studies have identified similar work-related predictors of burnout, including workload (Bram and Katz, 1989; Craig and Sprang, 2010; Lee and
Ashforth, 1993; Papadatou, Anagnostopoulos, and Monos, 1994) and low levels of social support (Balogun et al., 2002; Bram and Katz, 1989; Vassos and Nankervis, 2012). Experiences of burnout among genetic counselors was initially researched and established in a pilot study by Dexter et al. (2003). Overall, clinical genetic counselors were found to experience low-to-moderate levels of burnout, specifically that of emotional exhaustion. Further, low levels of social support and an inadequate work environment significantly contributed to burnout in all three subscales. Lastly, workload was significantly and positively associated with burnout in two subscales, indicating that feelings of emotional exhaustion and depersonalization increase with an increase in workload. Udipi et al. (2008) studied 222 practicing genetic counselors to determine the prevalence of compassion fatigue and burnout and found that 25% of genetic counselors experienced burnout. In contrast, Injeyan et al. (2011) learned that as many as 44% of genetic counselors experienced high levels of burnout, and Lee et al. (2015) discovered that lack of support at work, poor relationships with colleagues, and increased patient load contributed to burnout.

There is limited research on the effects of burnout. This may be, in part, because the manifestations of burnout have been reported in the literature as an amalgamation of both symptoms and the consequences. Bernhardt et al. (2009) has shown that among genetic service providers, practicing as a genetic counselor specifically is a predictor of burnout (compared to geneticists and nurses), and burnout was the most significant predictor of thoughts about leaving patient care. While some research has conceptualized the process by which burnout may lead to thoughts of leaving their current job, additional research is warranted in the clinical genetic counseling profession.
While it is known that genetic counselors are susceptible to burning out, there is a paucity of research that identifies specific predictors of burnout in this unique subset of healthcare professionals. This knowledge will aid in identifying best practice interventions to decrease the risk of burnout in clinical genetic counselors so that they can continue to enjoy the work that they do and provide attentive, quality care to their patients. The purpose of this study was to measure the level of burnout in clinical genetic counselors, to explore work-related predictors of burnout, and to determine the relationship between burnout and thoughts of leaving their current job. The following research questions were posed:

(1) What is the level of burnout among clinical genetic counselors?

(2) What is the relationship between social support, workload, and burnout among clinical genetic counselors?

(3) Is there a relationship between burnout and counselors’ thoughts of leaving their current job?

Findings from the existing literature, culminated into the development of three hypotheses: (1) Genetic counselors who experience low levels of social support will experience higher levels of burnout than counselors who experience high levels of social support; (2) Counselors with a greater workload will experience higher levels of burnout compared to counselors with a lesser workload, and; (3) burnout is significantly associated with counselors’ thoughts of leaving their current job.
METHODS

PARTICIPANTS AND RECRUITMENT

This was a cross-sectional study and the population of interest included practicing clinical genetic counselors; participation was limited to clinical genetic counselors who counsel patients in-person and/or remotely. Upon receipt of approval from the Brandeis University Institutional Review Board, an e-mail invitation to participate in an anonymous, self-administered survey was sent to individuals subscribed to the National Society of Genetic Counselors (NSGC; N=3,605) listserv. An initial notification email was sent at the end of January, 2016 and again two weeks later. The invitation (See Appendix A: Recruitment Notification) described the research as a study exploring clinical genetic counselors’ experiences and perceptions of their work environment.

A total of 367 responses were used for analysis. Although it was challenging to determine the total number of clinical genetic counselors who received the invitation email and chose not to participate, a conservative estimated response rate is 13.8% (367/2,668).

PROCEDURES

The instrument was designed to gather information regarding: (1) Employment and demographic characteristics (19 items); (2) Burnout through the use of the Maslach Burnout Inventory–Human Services Survey (MBI-HSS, 22 items); (3) Social support in the workplace (9 items), and; (4) Thoughts of leaving current job (4 items).
The questions included a combination of multiple choice, fill-in, Likert-scale, frequency-scale, and open-ended responses. The order of the MBI-HSS, social support survey, and thoughts of leaving current job items were randomized to counterbalance order effects. The demographic and employment characteristics questions comprised the initial and final sections of the survey to minimize participant fatigue when responding to the MBI-HSS, social support survey, and items regarding thoughts of leaving their current job. See Appendix B (Instrument) for a complete list of survey questions.

**Burnout**

The MBI-HSS is a standardized, validated tool that measures burnout in three dimensions: emotional exhaustion (9 items), depersonalization (5 items), and reduced personal accomplishment (8 items) (Maslach & Jackson, 1981). The MBI-HSS is composed of 22 items written in the form of statements about personal feeling or attitudes toward work and recipients of care (i.e., patients/clients), and are rated on a seven-point frequency scale (ranging from 0=never to 6=everyday). Sample items include: “I feel emotionally drained from my work,” “I deal very effectively with the problems of my recipients,” and “I feel exhilarated after working closely with my recipients.” Participant scores on the MBI-HSS subscales were classified as high, moderate, or low using numerical cutoff points provided in the MBI-HSS manual. Burnout was reflected in higher scores on emotional exhaustion and depersonalization, and lower scores on personal accomplishment. In contrast, low burnout was indicated by low scores on the emotional exhaustion and depersonalization subscales and a high score on the personal accomplishment subscale. Moderate burnout was indicated by moderate scores in all three subscales.
Social Support

Survey items were developed from a review of the medical literature, including previously published surveys assessing respondents’ perceived levels of social support in the workplace. For the purpose of this study, social support was defined as help, encouragement and guidance received from colleagues and supervisors. These items were used to measure the degree to which respondents agreed with the questions by assessing their perception of social support in their workplace (1=strongly disagree to 4=strongly agree). Sample items include: “the people I work with are encouraging” and “I am able to rely on my supervisor for support if a problem arises.” Participant scores were classified as high, moderate, or low using our constructed numerical cutoff points. The instrument is scored for a total of 36 points, with higher scores indicating greater perceived social support. Cronbach’s alpha for this scale was .90, demonstrating strong reliability.

Thoughts of leaving current job

One items assessed respondents’ thoughts of leaving their current job (‘How often do you think about leaving your current job as a genetic counselor?’) and plans to quit (‘Do you plan on leaving your job within the next year?’). Respondents rated the first item on a five-point frequency scale (1=never to 5=always). One open-ended item asked respondents to provide a statement(s) about why they think of leaving their current job.

DATA ANALYSIS

Quantitative Analysis

Frequencies, descriptive statistics (means, standard deviations, and percentages), and regression analysis using SPSS version 23 software were calculated for responses to the
demographic and employment items, the MBI-HSS, the social support survey, and thoughts of leaving current job items. Ordinal Logistic Regression analysis was used to identify significant predictors of burnout. The predictors included in the model were social support and workload, controlling for demographic and employment variables. Chi-square tests of independence were performed to examine the relationship between the burnout subscales and thoughts of leaving current job, and actual plans to leave within the next year. Statistical significance was set at $p = .05$.

Qualitative Analysis

Participants’ written responses regarding their reason(s) for thinking of leaving their job were number coded (1= Family/Personal, 2=Workload, 3=Pay, 4=Management issues, 5=Work/Life balance, 6=Burned-out, 7=Professional Growth, 8=Work Morale/Appreciation, 9=Specialty, 10=Isolation) for quantitative analysis. Open-ended responses to the questionnaire are noted with quotation marks and italicized texts.
RESULTS

DEMOGRAPHICS & EMPLOYMENT CHARACTERISTICS

Clinical genetic counselor demographic and employment characteristics are summarized in Table 1. The majority of respondents \((n=356; 97.3\%)\) were female, as expected for the profession as a whole (NSGC, 2014). As shown in Figure 1, slightly over half of respondents reported practicing in Region 2 (21\%) and Region 4 (30\%), also consistent with the Professional Status Survey (PSS) data (NSGC, 2014).

Table 1 Respondent demographic and employment characteristics \((N=367)\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(n)</th>
<th>%</th>
<th>(M (SD))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>356</td>
<td>97.3</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td>34.2 (9.5)</td>
</tr>
<tr>
<td>Primary specialty area (&gt; 50% of time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult</td>
<td>9</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>124</td>
<td>36.5</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>18</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Pediatrics</td>
<td>58</td>
<td>15.8</td>
<td></td>
</tr>
<tr>
<td>Prenatal</td>
<td>101</td>
<td>27.5</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>47</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-------------------------</td>
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<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>310</td>
<td>84.5</td>
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</tr>
<tr>
<td>Part-time</td>
<td>57</td>
<td>15.5</td>
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<th>Number of genetic counselor co-workers</th>
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<tr>
<td></td>
<td>4.4 (6.7)</td>
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<table>
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<tr>
<th>Genetic counseling experience (years)</th>
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<tbody>
<tr>
<td></td>
<td>7.7 (7.8)</td>
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<table>
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<th>Clinical genetic counseling experience (years)</th>
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<tr>
<td></td>
<td>7.2 (7.3)</td>
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<table>
<thead>
<tr>
<th>Patients seen per week</th>
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<tbody>
<tr>
<td></td>
<td>11.2 (7.2)</td>
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<table>
<thead>
<tr>
<th>Administrative work (hours)</th>
<th></th>
</tr>
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<tbody>
<tr>
<td></td>
<td>19.0 (8.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overtime (hours)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.1 (4.2)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Counseling in-person (%)</th>
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</tr>
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<tbody>
<tr>
<td>Less than 25</td>
<td>47</td>
</tr>
<tr>
<td>26-50</td>
<td>73</td>
</tr>
<tr>
<td>51-75</td>
<td>107</td>
</tr>
<tr>
<td>76-100</td>
<td>140</td>
</tr>
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<table>
<thead>
<tr>
<th>Counseling remotely (%)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Less than 25</td>
<td>330</td>
</tr>
<tr>
<td>26-50</td>
<td>17</td>
</tr>
<tr>
<td>51-75</td>
<td>3</td>
</tr>
<tr>
<td>76-100</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship status</th>
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<tbody>
<tr>
<td>Committed</td>
<td>80</td>
</tr>
<tr>
<td>Divorced</td>
<td>6</td>
</tr>
<tr>
<td>Married</td>
<td>213</td>
</tr>
<tr>
<td>Single</td>
<td>66</td>
</tr>
<tr>
<td>Children</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>134</td>
</tr>
<tr>
<td>No</td>
<td>229</td>
</tr>
</tbody>
</table>

**Figure 1 Region of Practice**

- Region 1: CT, MA, ME, NH, RI, VT, CN, Maritime Provinces
- Region 2: DC, DE, MD, NJ, NY, PA, VA, WV, PR, VI, Quebec
- Region 3: AL, FL, GA, KY, LA, MS, NC, SC, TN
- Region 4: AR, IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, OK, SD, WI, Ontario
- Region 5: AZ, CO, MT, NM, TX, UT, WY, Alberta, Manitoba, Saskatchewan
- Region 6: AK, CA, HI, ID, NV, OR, WA, British Columbia

**BURNOUT SUBSCALE SCORES**

The individual scores for the three MBI-HSS subscales were not combined into one burnout score; accordingly, three scores were computed for each respondent. Table 2 lists the numerical cut-offs for the high, moderate and low categories provided by the MBI-HSS manual, as well as the descriptive statistics and frequencies for the MBI-HSS subscale scores. The mean Emotional Exhaustion score was 18.69 ($SD=9.3$); 80 respondents (21.8%) scored in the high reference range, and the remaining 287 respondents (78.2%) scored in the moderate (30.5%; $n=112$) to low
The mean Depersonalization score was 5.98 (SD=5.1); 10.6% (n=39), 27.5% (n=101), and 61.9% (n=227) scored in the high, moderate, and low range, respectively. The mean Personal Accomplishment score was 39.33 (SD=5.6); 227 respondents (61.9%) scored in the high reference range, and the remaining 140 respondents (38.1%) scored in the moderate (30.2%; n=111) to low (7.9%; n=29) range.

Table 2 Respondents’ Maslach Burnout Inventory Subscale Scores

<table>
<thead>
<tr>
<th>Burnout Subscale Scores</th>
<th>n</th>
<th>Percent</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Exhaustion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 16)</td>
<td>175</td>
<td>47.7</td>
<td></td>
</tr>
<tr>
<td>Moderate (17-26)</td>
<td>112</td>
<td>30.5</td>
<td></td>
</tr>
<tr>
<td>High (≥ 27)</td>
<td>80</td>
<td>21.8</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>367</td>
<td></td>
<td>18.69 (9.3)</td>
</tr>
<tr>
<td><strong>Depersonalization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 6)</td>
<td>227</td>
<td>61.9</td>
<td></td>
</tr>
<tr>
<td>Moderate (7-12)</td>
<td>101</td>
<td>27.5</td>
<td></td>
</tr>
<tr>
<td>High (≥ 13)</td>
<td>39</td>
<td>10.6</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>367</td>
<td></td>
<td>5.98 (5.1)</td>
</tr>
<tr>
<td><strong>Personal Accomplishment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 31)</td>
<td>29</td>
<td>7.9</td>
<td></td>
</tr>
<tr>
<td>Moderate (32-38)</td>
<td>111</td>
<td>30.2</td>
<td></td>
</tr>
<tr>
<td>High (≥ 39)</td>
<td>227</td>
<td>61.9</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>367</td>
<td></td>
<td>39.33 (5.6)</td>
</tr>
</tbody>
</table>

SOCIAL SUPPORT SCALE SCORES

As shown in Figure 2, most (68.1%, n=250) respondents reported high levels of perceived social support, followed by moderate (28.9%, n=106) and low (3.0%; n=11) levels. Counselors who reported high levels of social support noted:

“Great supportive atmosphere!”

“*My supervisor is a huge source of support and encouragement for the genetic counseling team, which has helped create a very positive work environment. In my previous job, I did not feel any sort of support from my supervisor, which made day-to-
day things such as requesting vacation or scheduling clinic coverage at our various clinics very stressful”

THOUGHTS OF LEAVING CURRENT JOB

As shown in Figure 3, 18.8% (n=69) and 32.2% (n=118) of respondents never or rarely think of leaving their current job. In contrast, 23.7% (n=120), 13.9% (n=51), and 2.5% (n=9) sometimes, often, or always think of leaving, respectively. When grouped, there was an even distribution with 51% (n=187) who never or rarely think of leaving, and 49% (n=180) who sometimes, often, or always think of leaving. Of those who sometimes, often, or always think of leaving, 17.2% (n=31) plan on leaving their job within the next year and 37.2% (n=67) are unsure. Of the 17.2% who plan on leaving, most plan on staying in the field of genetic counseling and of the same clinical subspecialty (32.3%, n=10), or they plan on remaining in the field of genetic counseling but not in clinical practice (32.3%, n=10).

Of those respondents who selected sometimes, often, or always, 169 (93.9%) provided statements about why they think of leaving their current job. Consistent themes in the open-
ended responses included their dissatisfaction with management, salary, and workload. A few corresponding reflections included:

“I am frustrated because we are underpaid and overworked”

“I work extra hours and I make below the 3rd percentile for genetic counselors in my area. My patient load is starting to exceed my capacity to feel like I am doing a good job”

“Poor management, bad pay structure, overscheduling of patients...”

“[There is] a lack of response from management when issues arise [and] inadequate administrative support”

![Figure 3 Thoughts of Leaving Current Job](image)

### PREDICTORS OF BURNOUT

Table 3 shows the results of the regression analysis. It was hypothesized that low social support is associated with higher levels of experienced burnout. Indeed, social support was significantly associated with all three subscales, such that respondents who scored in the low range were more likely to experience emotional exhaustion (OR=21.63, p<.001) and
depersonalization (OR=9.87, p<.001), and less likely to experience personal accomplishment (OR=0.175, p=.008) compared to respondents who scored in the high range.

It was also hypothesized that genetic counselors with a higher workload are more likely to experience burnout. In line with this hypothesis, the number of hours spent on administrative work and emotional exhaustion were positively associated, such that respondents who spent more time on administrative tasks per week were more likely to experience emotional exhaustion (OR=1.04, p=.027). Also, number of hours of overtime was positively associated with both emotional exhaustion (OR=1.16, p<.001) and depersonalization (OR=1.08, p=.041), such that respondents who worked overtime were more likely to experience emotional exhaustion and depersonalization. Weekly patient load and number of hours worked per week were not significant with all three burnout subscales (p ≥ .069 and p ≥ .083, respectively). Results indicated that respondents who practice in Region 1 were less likely to experience emotional exhaustion than respondents who practice in Region 6 (OR=0.29, p=.022). Also, respondents from Region 2 were less likely to feel personally accomplished than their colleagues from Region 6 (OR=0.39, p=.043). Age and depersonalization were negatively associated, indicating that younger respondents were more likely to experience depersonalization than their older colleagues (OR=0.90, p=.001).

Because genetic counselors experience additional job responsibilities than counseling patients, respondents were asked to indicate the percentage of their time dedicated to counseling patients in-person. Respondents who reported to counsel patients 26-50% of their time were more likely to experience depersonalization compared to those who reported to counsel patients more than 75% of their time (OR=2.00, p=.044).
Counselors’ relationship status and burnout were significantly associated. Respondents who had divorced were more likely to experience depersonalization compared to respondents who reported being single (OR=21.05, p=.003). Respondents who reported being married were less likely to experience personal accomplishment than single respondents (OR=0.432, p=.033). Lastly, those in a committed relationship were less likely to experience personal accomplishment than single respondents (OR=0.448, p=.047).

Subspecialty and personal accomplishment were positively associated, such that respondents specializing in cancer were more likely to experience personal accomplishment than their colleagues working in specialty clinics (e.g., newborn screening, cardiovascular, infertility) (OR=3.61, p=.005). In contrast, burnout was not significantly associated with work setting (p ≥ .105), number of years as a genetic counselor (p ≥ .208), number of genetic counselor co-workers (p ≥ .065), number of hours worked per week (p ≥ .083), number of patients counseled per week (p ≥ .069), percent of time counseling remotely (p ≥ .389), and parental status (p ≥ .121).
<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>OR</th>
<th>SE</th>
<th>p</th>
<th>OR</th>
<th>SE</th>
<th>p</th>
<th>OR</th>
<th>SE</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin. (hours)</td>
<td>1.04</td>
<td>.016</td>
<td>.027</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overtime (hours)</td>
<td>1.16</td>
<td>.039</td>
<td>&lt;.001</td>
<td>1.08</td>
<td>.039</td>
<td>.041</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region 1 (Northeast)</td>
<td>31</td>
<td>0.290</td>
<td>.541</td>
<td>.022</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Region 2 (Mid-Atlantic)</td>
<td>73</td>
<td></td>
<td></td>
<td>0.390</td>
<td>.461</td>
<td>.043</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support (low)</td>
<td>11</td>
<td>21.63</td>
<td>.730</td>
<td>&lt;.001</td>
<td>9.87</td>
<td>.656</td>
<td>&lt;.001</td>
<td>0.175</td>
<td>.653</td>
<td>.008</td>
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<tr>
<td>Social support (moderate)</td>
<td>101</td>
<td>3.59</td>
<td>.256</td>
<td>&lt;.001</td>
<td>1.91</td>
<td>.264</td>
<td>&lt;.014</td>
<td>0.373</td>
<td>.266</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td>0.90</td>
<td>.032</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time spent counseling in-person</td>
<td>72</td>
<td>2.00</td>
<td>.342</td>
<td>.044</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship status (divorced)</td>
<td>5</td>
<td>21.05</td>
<td>1.025</td>
<td>.003</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Relationship status (committed)</td>
<td>79</td>
<td></td>
<td></td>
<td>0.448</td>
<td>.404</td>
<td>.047</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Relationship status (married)</td>
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<td></td>
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<td>.393</td>
<td>.033</td>
<td></td>
<td></td>
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<tr>
<td>Subspecialty (cancer)</td>
<td>129</td>
<td></td>
<td></td>
<td>3.61</td>
<td>.454</td>
<td>.005</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: only variables showing significance included; Abbreviations: OR=Odds Ratio, SE=Standard Error, EE=Emotional Exhaustion, DP=Depersonalization, PA=Personal Accomplishment

Table 4 shows the results of the chi-square analysis. Because previous studies suggest that burnout is directly associated with intentions of leaving the job (Injeyan et al., 2011; Leiter & Maslach, 2009), the author hypothesized that burnout is significantly associated with counselors’
thoughts of leaving their current job. Indeed, thoughts of leaving were significantly associated with emotional exhaustion ($\chi^2 (4) = 115.95, p<.001$), depersonalization ($\chi^2 (4) = 55.08, p<.001$) and personal accomplishment ($\chi^2 (4) = 41.17, p<.001$). Of those respondents who reported high levels of emotional exhaustion, 35% ($n=28$) often have thoughts of leaving their current job, and of those respondents who reported low levels of depersonalization, 37% ($n=84$) rarely have thoughts of leaving. Also, of those who reported high levels of personal accomplishment, 25.6% ($n=58$) never think of leaving their current job. In contrast, burnout and plans to leave current job within the next year were not significantly associated ($p=.072$).

<table>
<thead>
<tr>
<th>Thoughts of leaving current job</th>
<th>EE L</th>
<th>EE M</th>
<th>EE H</th>
<th>DP L</th>
<th>DP M</th>
<th>DP H</th>
<th>PA L</th>
<th>PA M</th>
<th>PA H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>51</td>
<td>17</td>
<td>1</td>
<td>57</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>58</td>
</tr>
<tr>
<td>%</td>
<td>29.1</td>
<td>15.2</td>
<td>1.3</td>
<td>25.1</td>
<td>9.9</td>
<td>5.1</td>
<td>6.9</td>
<td>8.1</td>
<td>25.6</td>
</tr>
<tr>
<td>Rarely</td>
<td>78</td>
<td>30</td>
<td>10</td>
<td>84</td>
<td>28</td>
<td>6</td>
<td>5</td>
<td>32</td>
<td>81</td>
</tr>
<tr>
<td>%</td>
<td>44.6</td>
<td>26.8</td>
<td>12.5</td>
<td>37.0</td>
<td>27.7</td>
<td>15.4</td>
<td>17.2</td>
<td>28.8</td>
<td>35.7</td>
</tr>
<tr>
<td>Sometimes</td>
<td>39</td>
<td>48</td>
<td>33</td>
<td>59</td>
<td>48</td>
<td>13</td>
<td>10</td>
<td>47</td>
<td>63</td>
</tr>
<tr>
<td>%</td>
<td>22.3</td>
<td>42.9</td>
<td>41.3</td>
<td>26.0</td>
<td>47.5</td>
<td>33.3</td>
<td>34.5</td>
<td>42.3</td>
<td>27.8</td>
</tr>
<tr>
<td>Often</td>
<td>7</td>
<td>16</td>
<td>28</td>
<td>25</td>
<td>11</td>
<td>15</td>
<td>11</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>%</td>
<td>4.0</td>
<td>14.3</td>
<td>35.0</td>
<td>11.0</td>
<td>10.9</td>
<td>38.5</td>
<td>37.9</td>
<td>16.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Always</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>%</td>
<td>0.0</td>
<td>0.9</td>
<td>10.0</td>
<td>0.9</td>
<td>4.0</td>
<td>7.7</td>
<td>3.4</td>
<td>4.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note:** Chi-square test significant at $p < .001$ for all three subscales; Abbreviations: EE=Emotional Exhaustion, DP=Depersonalization, PA=Personal Accomplishment L=Low, M=Moderate, H=High
DISCUSSION

Burnout is a complex condition that results from chronic job stress and is characterized by feeling emotionally drained by one’s contact with other people (emotional exhaustion), having negative sentiments and pessimistic attitudes toward patients (depersonalization), and the propensity to view one’s own work negatively (decreased personal accomplishment) (Maslach, 1982). Although widespread in many working environments, professionals working in helping professions, who provide direct care to other people, are uniquely vulnerable to burning out (Felton, 1998; Pines, 1988). Lack of successful coping mechanisms to ameliorate adverse physical and psychological responses to burnout may compromise a professionals’ physical well-being (e.g., illness, fatigue, insomnia) and induce psychological distress (e.g., anxiety, feelings of dissatisfaction, depression) (Maslach, 1976).

PREVALENCE OF BURNOUT IN CLINICAL GENETIC COUNSELORS

The results corroborate findings of previous studies, suggesting that clinical genetic counselors are susceptible to experiencing burnout (Dexter et al., 2003; Injeyan et al., 2009). Dexter et al. (2003) found that clinical genetic counselors experience moderate burnout in the areas of emotional exhaustion and personal accomplishment, and low burnout in the area of depersonalization. Likewise, in this study, genetic counselors experienced moderate burnout in the area of emotional exhaustion, and low burnout in the area of depersonalization. In contrast to Dexter et al. (2003), this current sample experienced high levels of personal accomplishment,
indicating lower burnout. This observed trend signifies that genetic counselors continue to be emotionally drained, but they appear to be less impacted by the stresses of their work in the other domains of burnout. As shown by their low levels of depersonalization, counselors’ sentiments toward their patients continue to be more optimistic rather than pessimistic or cynical; respondents’ reflections were in line with this:

“Sometimes I experience burnout or feel that I no longer care as much about certain cases, but then I will encounter a patient who reminds me of how important my efforts have been to them and the positive impact that I have had. This appreciation often makes up for some of the cases that exhaust me a bit…”

“I love my patients…my patients make coming to work rewarding and enjoyable…”

Reflective of their positive sentiments counselors have toward their work, respondents noted:

“…[I] very much enjoy and derive a sense of meaning from my clinical work. So despite the demands, I believe that my work is meaningful”

“…stress is part of the job but that doesn’t mean it makes the job unbearable. After more than 10 years as a clinical counselor, I still love my job and feel I am helping people”

Perhaps counselors’ low levels of depersonalization and high levels of personal accomplishment may be attributed to their success with various coping strategies, particularly engaging in self-care activities, to deal with the stress and strain of their work. Indeed, respondents’ reflections conveyed the value of self-care:

“…I address work challenges by talking to my colleagues and friends, [and] participating in self-care activities such as exercise, crafts, and baking when time allows”

“In my first several years of counseling, I did not have any understanding of the concept of ‘self-care’. Over time, I have learned the concept, the value, and necessity of it and think as a profession we need to teach ourselves and our colleagues how [to] implement self-care techniques to help us serve our patients and ourselves over the ‘long haul’”
PREDICTORS OF BURNOUT

We identified several significant predictors of burnout, including low levels of social support, greater workload, and several demographic and employment characteristics. Previous research has shown that social support and burnout are negatively associated (Balogun et al., 2002; Dexter et al., 2003; Fenlason & Beehr, 1994; Lee & Ashforth, 1993a; Maytum et al., 2004; Vassos & Nankervis, 2012). Indeed, low social support was the strongest predictor of emotional exhaustion, and also showed to have a negative association with both depersonalization and personal accomplishment. Overall, lower levels of perceived social support was associated with a greater likelihood of experiencing burnout. Counselors conveyed the following about the negative impact of being isolated and having a non-genetic counselor as a supervisor:

“As an isolated provider now without any support from the organization, it has become extremely difficult to function effectively and to WANT to continue to serve this community”

“My supervisor is a nurse manager; she is a good process manager, but has limited knowledge in genetics and therefore, is of limited support to me in practice”

These findings are consistent with a previous study suggesting that social support in the workplace is crucial to the work environment and may counteract the development of burnout (LaRocco, House, & French, 1980). This leads to the assumption that social support is protective against burnout and clinical genetic counselors who lack appropriate support, may be more vulnerable to experiencing burnout. According to the literature, social support from supervisors is particularly meaningful, even more so than support from colleagues (Maslach, Schaufeli, & Leiter, 2001). This strongly highlights the importance for institutions to ensure that necessary resources are available for genetic counselors to receive the support they need to avoid and/or ameliorate the negative impact of burnout.
Consistent with previous research in this area (Dexter et al., 2003; Langbelle et al., 2010; Shaufeli & Enzmann, 1998; Vassos & Nankervis, 2012), workload was a predictor of burnout. The number of hours spent on administrative work was positively associated with emotional exhaustion. Also, the number of hours of overtime was positively associated with emotional exhaustion and depersonalization. This was not surprising since workload is considered to be a key burnout risk factor in the collective burnout literature (Maslach, Schaufeli, & Leiter, 2001). The Leiter and Maslach model of burnout posits that emotional fatigue is a response to lack of resources and job strain, and as a way to cope with the fatigue, exhaustion progresses to a state in which one develops negative feelings toward others (Leiter and Maslach, 1988). Applying this logic, it can be postulated that our sample populations’ experience with emotional fatigue is in response to their demanding workload, specifically that of administrative demands. Consequently, they may be less likely to express empathy and more likely to develop pessimistic sentiments toward their patients to reduce the frustrations associated with work (Cherniss, 1980). However, despite their experience with fatigue, most respondents did not develop negative attitudes toward their patients, as evidenced by their low depersonalization subscale scores.

Contrary to the author’s predictions, genetic counselors’ weekly patient load and the number of hours worked per week were not significantly associated with burnout. It may be that genetic counselors gain personal satisfaction from providing care to patients, thus their weekly patient load and the number of hours worked per week were not contributing to their feelings of burning out; on the other hand, completing administrative tasks that counselors may view as menial and not enjoyable may be triggering their fatigue. In line with this reasoning, one respondent stated,
“My biggest burnout is working with insurance preauthorization… and the administration and their lack of support….” These findings underscore the value of receiving adequate administrative support for practicing clinical genetic counselors.

Depersonalization was moderately affected by age, indicating that younger respondents were more likely to experience depersonalization than older respondents, which corroborates findings of previous studies (Canadas-De la Fuente et al., 2015; Dexter et al., 2003; Maslach, Schaufeli, & Leiter, 2001). Younger genetic counselors may have minimal professional experience and, in consequence, may not have had ample time to develop effective skills to counteract burnout. Also, younger counselors may not feel as valuable to the work setting and they may feel the pressure to succeed in a busy setting, potentially contributing to their increased likelihood of developing negative feelings toward others and their patients. In contrast, Older respondents may have acquired effective coping strategies, explaining the decrease in burnout over time.

In this study, respondents who reported being married were less likely to experience personal accomplishment than their single counterparts. Previous studies report the opposite relationship; those who are unmarried appear to be more susceptible to experiencing burnout than those who are married (Maslach, Schaufeli, & Leiter, 2001). Additional chi-square analysis yielded a significant association between relationship status and parental status ($\chi^2 (3) = 110.39$, $p<.001$). Slighter over half of married respondents (57.5%, $n=122$), reported to have children and almost all who reported being single, reported to not have children (98.5%, $n=65$). Relationship status and the number of hours spent on administrative work ($\chi^2 (6) = 14.51$, $p=.024$) and the number of hours worked per week ($\chi^2 (6) = 14.00$, $p=.030$) were also shown to be significantly associated. Married respondents represented the greatest proportion of individuals who spent
21 or more hours on administrative tasks than all other groups. Also, close to half of married respondents worked more than 46 hours per week. Altogether, it may be that married genetic counselors with children may be strained in different ways, juggling both personal and work-related demands, thereby diminishing their resources and increasing their odds of experiencing burnout.

Furthermore, respondents working in the area of cancer were more likely to experience personal accomplishment than those working in specialty clinics. In the nursing profession, the body of literature on burnout conveys similarly; oncology nurses experience lower levels of burnout compared to nurses working in a general setting (Papadatou, Anagnostopoulos, & Monos, 1994). The rationale is that nurses care for patients who are frequently ill, facing death and pain (Garfield, 1980). Cancer genetic counselors care for patients in similar circumstances, so it may be that they find meaning in their work and derive fulfillment from caring for patients in this specialty area. Moreover, the challenges of helping patients with cancer may be gratifying, possibly counterbalancing the other stresses of the job. Chi-square tests of independence were performed to further examine this relationship between subspecialty and the social support, workload, and demographic and employment variables. Subspecialty and the number of genetic counselor co-workers were significantly correlated ($\chi^2 (12) = 38.92, p<.001$). Of interest, cancer counselors represented the greatest proportion of respondents with up to five genetic counselor co-workers. The literature suggests that having genetic counselor colleagues and/or taking part in a peer supervision group is a helpful outlet to process the demanding nature of their work (Hiller and Rosenfield, 2000). Perhaps that effect is seen here. Indeed, conferring with colleagues was the most commonly reported strategy for addressing burnout:
“I have found that one of the most helpful ways to address stress and burnout about my job is to talk to other genetic counselors. It has been beneficial to talk to others who understand the stresses of the job and patients, as well as the unique ways that genetic counseling can be emotionally draining.”

“Debriefing with genetic counselor coworkers is the most valuable tool to prevent burnout that I have come across.”

Analysis showed that specialty area was also significantly associated with the number of hours worked per week ($\chi^2 (12) = 23.65, p=.023$) and the percentage of time spent counseling patients in-person ($\chi^2 (18) = 66.10, p<.001$). Genetic counselors working in the cancer setting represented the greatest proportion ($n=104$) of respondents who reported working between 25 and 45 hours per week. Both prenatal and cancer counselors represented the greatest proportion of those who spent more than 75% of their time counseling patients in-person. By spending more of their time with patients, cancer counselors may be deriving a sense of personal achievement from their attempts to assist patients in that setting. Specialty area may serve as a useful predictor of experiencing higher levels of personal accomplishment, both on its own, and indirectly through its associations with other burnout predictors and correlates.

Lastly, respondents from Region 1 (Northeast) were less likely to experience emotional exhaustion compared to those from Region 6 (West coast). Chi-square tests of independence were performed between region, social support, workload, and all employment and demographic variables. Region and number of hours worked per week were significantly associated ($\chi^2 (12) = 30.47, p=.002$). Most genetic counselors ($n=38$) who worked between 25-45 hours per week were from Region 6 versus Region 1 ($n=21$). However, there was nearly an equal distribution between the number of respondents who worked greater than 46 hours per week between the two regions, thereby more challenging to effectively interpret. Since no other
variables showed significance with region, studies should make efforts to explore additional characteristics that may differentiate counselors from Region 1 versus Region 6.

BURNOUT OUTCOME: THOUGHTS OF LEAVING CURRENT JOB

Previous reports suggest that burnout is directly associated with intentions of leaving the workplace (Kahill, 1988; Lee & Ashforth, 1993). Corroborating those findings, in this study, all burnout domains were significantly associated with counselors’ thoughts of leaving their current job, indicating that burnout may prompt genetic counselors to reconsider their job which may eventually lead to actual plans to leave. Though, plans to leave and burnout were not significantly associated. The PSS data (NSGC, 2014) reported that 50% (n=95) of clinical genetic counselors have left the genetic counseling profession because of their experiences with burnout. Further, in this study, 32.2% (n=10) of those who plan on leaving, are seeking to work in a non-clinical setting. Notably, additional chi-square analysis showed that social support and thoughts of leaving were significantly associated ($\chi^2 (2) = 28.77, p<.001$). To facilitate analysis and interpretation, we collapsed response categories for thoughts of leaving current job to construct two categories of “sometimes, often, or always” and “never or rarely.” Results showed that 80.7% (n=151) of respondents who reported high levels of social support, never or rarely think of leaving their current job. Of those who reported moderate levels of social support, 40% (n=77) sometimes, often, or always think of leaving. The importance of addressing social support in the genetic counseling workplace is accentuated by the connection between social support and counselors’ consideration of leaving their job. Low levels of social support may serve as a useful predictor of counselors’ considerations of leaving their job both on its own, and indirectly through its association with burnout.
Most respondents’ reflections about their reason(s) for thinking of leaving their current job referenced concerns with the work environment; specifically, they expressed dissatisfaction with salary, administrative stress, high workload, and lack of appreciation for their work. Alluding to this, counselors noted:

“[I am] working extra hours and mak[ing] below [the] 3rd percentile for genetic counselors in my area. [My] patient load is starting to exceed my capacity to feel like I am doing a good job”

“...too much time given to charting, documenting, obtaining records...”

“[I am] mainly [having] issues with the supervisory staff and lack of respect given to the genetic counselors in the practice”

While outside the scope of this study, it may be prudent to investigate the mediating role of burnout on thoughts of leaving, in order to better delineate the association between genetic counselors’ work environment and their considerations of leaving their job.

STUDY LIMITATIONS

This study was cross-sectional and correlational, and thus causal connections cannot be made between the variables measured. The estimated response rate of 13.8% raises questions about the generalizability of the findings to the population of clinical genetic counselors. Perhaps clinical genetic counselors experiencing higher levels of burnout were more likely to participate, or oppositely, to avoid participating in this study. Further, it is possible that this study population reflects a “survival bias” (Maslach, Schaufeli, & Leiter, 2001), in that those who experienced high levels of burnout have already left clinical care.

Respondents may have been confused by the term ‘recipient’ when completing the MBI-HSS. The term was not defined in the survey and the six items that used the term were not modified to ‘patients’ and/or ‘clients’ for clarity. As such, a subset of counselors may not have been aware
of its intended meaning and their answers may not reflect what the items are attempting to capture. One respondent stated, “I had a hard time answering some of these questions because you didn't specify what a 'recipient' is. Is that a patient/client? A co-worker…”

This study endeavored to explore counselors’ considerations of leaving their current job as a direct result of experienced burnout, however, it was not possible to capture the perspectives of genetic counselors who have actually left their jobs. Also, the finding regarding the effect of age on burnout should be carefully interpreted as age is a known confounding factor with work experience, in that higher levels of burnout seem to be experienced earlier in a professionals’ career (Maslach, Schaufeli, & Leiter, 2001). Lastly, the findings related to relationship status (divorced) should also be interpreted with caution given the small number of participants (n=5) who identified themselves as divorced.

PRACTICE IMPLICATIONS

Despite these limitations, these findings represent an important contribution to the literature. These results make evident the need for interventions to address burnout among clinical genetic counselors. A number of respondents were experiencing moderate-to-high levels of burnout, which is concerning as burnout has a negative impact on the professional and the patient receiving care. Genetic counseling programs and continuing education opportunities could be useful resources to learn about burnout and ways to avoid and/or ameliorate its effects. Likewise, genetic counselors should be encouraged to join peer discussion, formal peer supervision, and integrate interventions by professionals from external settings. Indeed, these venues were mentioned by several respondents as strategies for addressing stress and burnout. One respondent noted:
“I work with a supportive team of approximately 6 other genetic counselors and other colleagues. We have supervision meetings every two weeks which greatly helps with reducing stress at work. We also have informal supervision amongst our group to discuss difficult interactions [with patients], etc.”

This report made evident that burnout impacts genetic counselors’ thoughts of leaving their current job. Additionally, social support showed to be a likely protective factor against burnout and considerations of leaving current job. Overall, supervisors and/or managers should be instrumental in integrating strategies that could decrease the risk of burnout; interventions should focus on particular aspects of the work environment including enhancing social support, decreasing workload (perhaps by employing additional counselors), and hiring assistants to help with the administrative tasks. Further, in a previous study (Lee et al., 2015), authors recommended the implementation of an online forum through the NSGC where genetic counselors could seek guidance and support on difficult clinical and/or work experiences, we suggest that here.

RESEARCH RECOMMENDATIONS

Results should be interpreted with some caution as non-work related factors were not included in the ordinal regression model. Burnout has been associated with work-unrelated factors such as personal/stressful life events (Schonfeld & Bianchi, 2015). Overall, future investigations should aim to focus both on the work environment and personal correlates of burnout to gather more comprehensive findings, as burnout is not exclusively dependent on work-related factors. The present study findings indicated an association between the amount of time spent on administrative tasks and burnout; to assess the impact of receiving administrative support on genetic counselor burnout, research efforts should be made to evaluate institutions that are currently hiring administrative support personnel. Lastly, because
the findings regarding relationship status, primary specialty area, and region were unexpected and/or remained unclear, subsequent research should make efforts to explore why these variables had an impact on burnout.
CONCLUSION

The three primary messages from this study are that clinical genetic counselors continue to experience burnout, social support in the workplace is strongly protective against burnout, and burnout impacts whether clinical genetic counselors think of leaving their current job. The field is experiencing a shortage of clinical genetic counselors, which may be influenced by counselors’ decision to leave clinical practice and join industry positions because of experienced burnout. We identified specific work-related risk factors of burnout, which may direct genetic counselor managers toward appropriate action points for intervention. Further, supervisors should strive to foster a healthy, supportive work environment which may lead to lower levels of experienced burnout, and may indirectly affect genetic counselors’ thoughts of leaving their current job. Overall, the current study findings provide institutions with the information they need to implement strategies in their workplace to reduce burnout in clinical genetic counselors.
REFERENCES


APPENDICES

APPENDIX A: RECRUITMENT NOTIFICATION

**Subject:** Genetic Counselors’ Perspectives and Experiences in their Work Environment

**Seeking Clinical Genetic Counselors to Participate in a Research Study**

You are invited to participate in an online research survey to study genetic counselors’ perspectives and experiences in their work environment.

This study is open to clinical genetic counselors currently providing in-person and/or remote counseling to patients in their practice.

This anonymous survey will take **10 minutes** of your time. All participants who complete the survey will have the opportunity to enter a drawing for **one of three $50 Amazon.com gift cards**. Your survey responses will not be connected to your email address. This study was approved by the Brandeis University Institutional Review Board. If you wish to be a part of this study please click the link provided below.

If you have any questions, concerns, or comments, please feel free to contact me by email at dmar3103@brandeis.edu, or the Brandeis University faculty sponsor, David Rintell, at rintell@brandeis.edu.

Thank you in advance for your time and participation.

[Click here to take the survey!]

Sincerely,

Daniela Martiniuc  
Master’s Degree Candidate, Class of 2016  
Genetic Counseling Program  
Brandeis University

David Rintell, Ed.D.  
Adjunct Professor in Genetic Counseling at Brandeis University  
Psychologist at Partners Multiple Sclerosis Center, Brigham and Women’s Hospital
APPENDIX B: INSTRUMENT*

Welcome!

I am conducting a research project as part of my Master’s thesis at Brandeis University to study genetic counselors’ perspectives and experiences in their work environment. This study is open to clinical genetic counselors who are currently providing in-person and/or remote counseling to patients.

This anonymous survey will take approximately 10 minutes to complete. We ask that you respond to all survey questions; however, you may skip any questions, and you can end your participation at any point. If you would like to be eligible to win one of three $50 gift cards to Amazon.com, please enter your email address on the separate unlinked site as directed at the end of the survey.

This study was approved by the Brandeis University Institutional Review Board. If you have questions about your rights as a research subject, please contact the Brandeis Institutional Review Board at irb@brandeis.edu or 781-736-8133.

By clicking the “Next” button below you are consenting to participate in this study.

Thank you!

Q1. Do you currently work as a clinical genetic counselor?
   o Yes
   o No

If No Is Selected, Then Skip To End Of Survey

Q2. How many years of genetic counseling experience do you have?

Q3. Of these, how many years in total have you spent as a clinical genetic counselor?

Q4. What is your primary work setting? (Please select one)
   o Community Hospital
   o Government Hospital/Medical Facility
   o Health Maintenance Organization (HMO)
   o Private Clinic
   o Private Hospital/Medical Facility
   o University Hospital/Academic Institution
   o Other, please specify:
Q5. What **percentage** of your position is spent counseling patients **in-person**?
- Less than 25%
- 26-50%
- 51-75%
- 76-100%

Q6. What **percentage** of your position is spent counseling patients **remotely** (via telephone, video, skype, etc.)?
- Less than 25%
- 26-50%
- 51-75%
- 76-100%

Q7. How many genetic counselors, **other than yourself**, currently work in your practice?

Q8. What is your **primary** specialty area (i.e., where you spend at least 50% of your time on a daily basis)? (Please select one)
- Adult
- Cancer
- General
- Pediatrics
- Prenatal
- Other, please specify:

Q9. Which specialty area in which you have worked during your career have you found **most** stressful? (Please select one)
- Adult
- Cancer
- General
- Pediatrics
- Prenatal
- Other, please specify:

Q10. On average, how many **hours** do you work **per week**?

Q11. On average, how many **patients** do you counsel in-person and/or remotely **per week**?
Q12. On average, how many **hours** do you spend doing administrative work **per week**? (i.e., case prepping, writing patient notes, calling out results, etc.)

Q13. On average, how many hours do you work **per week** beyond your scheduled paid hours?

Q14. Within the last week, how many **minutes** have you had during a typical work day for non-work activities?

(i.e., taking a walk, eating lunch without working throughout, making personal phone calls, etc.)

For the purposes of this survey, **social support** indicates help, encouragement and guidance received from colleagues and supervisors.

Q15. Rate your level of agreement or disagreement with the following statements regarding **social support** at your **current** institution:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>People I work with take a personal interest in me</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>People I work with are competent in doing their jobs</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The people I work with are encouraging</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My colleagues are willing to take on a case when needed</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My supervisor pays attention to what I am saying</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My supervisor is helpful</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
My supervisor acknowledges the things I do well

My supervisor offers constructive criticism for the areas I need improvement

I am able to rely on my supervisor for support if a problem arises

Optional Comments:

Q16. Please indicate the frequency for the following:

| How often do you think about leaving your current job as a genetic counselor? |
|-----------------------------|----------------|----------------|----------------|----------------|
| Never                      | Rarely         | Sometimes      | Often          | Always         |
| ○                          | ○              | ○              | ○              | ○              |

Q17. If [Sometimes, Often & Always] to Question 16, please provide a statement about why you think about leaving your job:

Q18. If [Sometimes, Often & Always] to Question 16, do you plan on leaving your current job as a clinical genetic counselor within the next year?

- Yes
- No
- Unsure

Q19. If [yes] to Question 18: If you were to leave your job, what would you do?

- Genetic counseling in a clinical setting, but in another subspecialty (e.g., prenatal, cancer, etc.)
- Genetic counseling in a clinical setting in the same subspecialty
- Genetic counseling, but not in a clinical setting
- Non-genetic counseling related employment
- Pursuit of another advanced degree (e.g., PhD, MPH, MSW, MBA, etc.)
Q20. We would be interested in any additional comments below that you have about stress, burnout, and how you address the challenges of working in the field of genetic counseling:

Q21. What is your current age?

Q22. What is your gender?
   o Female
   o Male
   o Other

Q23. What is your current relationship status?
   o Committed
   o Divorced
   o Married
   o Single
   o Widowed

Q24. Do you have children?
   o Yes
   o No

Q25. In what NSGC region do you currently practice?
   o Region 1: CT, MA, ME, NH, RI, VT, CN, Maritime Provinces
   o Region 2: DC, DE, MD, NJ, NY, PA, VA, WV, PR, VI, Quebec
   o Region 2: AL, FL, GA, KY, LA, MS, NC, SC, TN
   o Region 4: AR, IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, OK, SD, WI, Ontario
   o Region 5: AZ, CO, MT, NM, TX, UT, WY, Alberta, Manitoba, Saskatchewan
   o Region 6: AK, CA, HI, ID, NV, OR, WA, British Columbia
   o Other, please specify:

*The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) is not included due to the copyright agreement.
APPENDIX C: SUPPLEMENTAL FIGURES

Chi-square analysis of thoughts of leaving and emotional exhaustion

<table>
<thead>
<tr>
<th>Percent</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>29.1</td>
<td>44.6</td>
<td>22.3</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>15.2</td>
<td>42.9</td>
<td>14.3</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>13.5</td>
<td>41.3</td>
<td>35</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square analysis of thoughts of leaving and depersonalization

<table>
<thead>
<tr>
<th>Percent</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>6.9</td>
<td>17.2</td>
<td>34.5</td>
<td>37.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Moderate</td>
<td>8.1</td>
<td>28.8</td>
<td>42.3</td>
<td>16.2</td>
<td>4.5</td>
</tr>
<tr>
<td>High</td>
<td>25.6</td>
<td>35.7</td>
<td>27.8</td>
<td>9.7</td>
<td>1.3</td>
</tr>
</tbody>
</table>
Chi-square analysis of thoughts of leaving and personal accomplishment

Low
- Never: 25.6%
- Rarely: 35.7%
- Sometime: 27.8%
- Often: 9.7%
- Always: 1.2%

Moderate
- Never: 8.1%
- Rarely: 28.8%
- Sometime: 42.3%
- Often: 16.2%
- Always: 4.5%

High
- Never: 6.9%
- Rarely: 17.2%
- Sometime: 34.5%
- Often: 37.9%
- Always: 3.4%