

The Relationship between the Supervision Role and Compassion Fatigue and Burnout in Genetic Counseling

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Abstract Many genetic counselors provide supervision to students during their career. Previous studies have shown genetic counselors, in general, are at increased risk for developing compassion fatigue. The purpose of this study was to determine if there was a difference in compassion fatigue and burnout levels in genetic counselors who currently supervise compared to genetic counselors who do not. Genetic counselors who currently practice in a clinical setting ($N = 391$) completed an online survey containing demographic questions, the Professional Quality of Life Scale, the State-Trait Anxiety Inventory, and questions specific to the genetic counselor's experiences with supervision. Overall, when controlling for trait-anxiety, the supervision role by itself was not independently associated with the risk for compassion fatigue and burnout among genetic counselors. Within supervisors, however, there were several factors which were associated with this risk. Those with less supervision experience reported more secondary traumatic stress. Those supervisors reporting less confidence had decreased compassion satisfaction. Those with less experience or less confidence in their supervision role were most likely to be at increased risk for developing compassion fatigue. Training in supervision and support for dealing with compassion fatigue and burnout may be beneficial to supervisors with less experience.

Keywords Supervision · Compassion fatigue · Burnout · Genetic counseling students · Clinical supervision · Supervisor

Introduction

Genetic counselors have been found in previous studies to be more likely to experience burnout and compassion fatigue as compared to other genetic service providers (Bernhardt et al. 2009). Therefore, understanding the factors that influence the development of burnout and compassion fatigue in genetic counselors is critically important to helping decrease the impact of these phenomena on the field. Factors that have been previously identified to be related to burnout and compassion fatigue in genetic counselors include personality characteristics, demographic characteristics, and coping mechanisms (Lee et al. 2015). However, aspects of genetic counselors' jobs that may influence development of burnout and compassion fatigue have not been explored.

One role that genetic counselors often take on in their work is clinical supervision of genetic counseling students (Hendrickson et al. 2002; Masunga et al. 2014). All genetic counseling students are required to have supervised clinical experiences during their training including the completion of a logbook that includes a minimum of 50 core cases in a wide variety of clinical practice areas (ACGC 2013). Thus, clinical supervision is a role that is critical to the success of training in genetic counseling as well as the future of the field. No studies assessing the relationship between supervision and compassion fatigue and burnout have been performed. Supervision could increase a genetic counselor's compassion fatigue due to the addition of duties related to supervising students and having an increased workload and time commitment. This could be a significant concern for the field since supervisor compassion fatigue may lead to fewer available supervisors or

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decreased effectiveness of supervision. However, supervising students could have the opposite effect as well and lead to decreased levels of burnout and compassion fatigue among genetic counselors who take on this role because the students are enthusiastic and allow the genetic counselor an opportunity to reflect on his or her own practice. If this is the case, it would be helpful to communicate this positive impact to potential supervisors. In either case, it is important to understand how this vital role is impacting genetic counselor burnout and compassion fatigue.

Compassion Fatigue and Burnout

The term “compassion fatigue” was initially introduced by Joinson (1992) to describe a phenomenon in the nursing field where some nurses experienced isolation from interacting with patients who were in some sort of distress or stressful situation. Symptoms often associated with compassion fatigue include feelings of hopelessness, helplessness, apathy, and emotional disengagement or isolation (Day and Anderson 2011). Figley (1995) developed a ten-component model of compassion fatigue, which describes compassion fatigue as a natural process which takes time to develop. Additionally, Figley described compassion fatigue as secondary traumatic stress. It was hypothesized that compassion fatigue could be a result of healthcare professionals not identifying and incorporating sufficient personal coping strategies to cope with the symptoms they were experiencing (Figley 1995).

Related to compassion fatigue is the concept of burnout, originally described by Freudenberger (1975). Burnout occurs when a person becomes both physically and mentally exhausted due to continually experiencing high demand and stressful situations. The symptoms and presentation vary from person to person, but may include exhaustion, sleeplessness, and frequent headaches. (Freudenberger 1975). Using the Professional Quality of Life scale (ProQOL), previous studies have found that 19–44 % of genetic counselors are at high risk for burnout (Injeyan et al. 2011; Lee et al. 2015). Gentry et al. (2002) described compassion fatigue and burnout as having a synergistic relationship. Burnout and secondary traumatic stress have been described as the two elements that make up compassion fatigue. Burnout is specifically related to the depression and exhaustion that makes up compassion fatigue. Thus, burnout plays a major role in the development of a person’s overall compassion fatigue.

Using the ProQOL, previous studies have found that between 25 and 100 % of genetic counselors are at moderate to high risk for compassion fatigue (Injeyan et al. 2011; Lee et al. 2015; Udipi et al. 2008). Injeyan et al. (2011) found that approximately 26.6 % of the genetic counselors surveyed had considered leaving their jobs at some point due to the development of various compassion fatigue symptoms. When

genetic counselors were compared to other genetic service providers, including physicians and nurses, genetic counselors were found to be at an increased likelihood to experience distress and feelings related to conflicts of one’s own values and professional responsibility burden, therefore increasing the risk of experiencing burnout (Bernhardt et al. 2009). Genetic counselors were nearly four times more likely to think about leaving patient care than nurses (Bernhardt et al. 2009). This indicates that burnout and compassion fatigue may be a significant threat to the genetic counseling field; therefore, it is important to understand the risk factors associated with these issues.

Researchers have suggested that genetic service providers may be at a higher risk of experiencing distress than other health care providers because of the nature of their field, including the uncertainty of patient recurrence risks, diagnoses, and prognoses (Maytum et al. 2004). Udipi et al. (2008) identified several factors within genetic counseling that may increase the risk of developing compassion fatigue. These include dealing with difficult patients, delivering bad news, traumatic recollections or memories of patients/patient experiences, and other life demands. Specifically, in genetic counselors, burnout has been found to be one of the strongest predictors of the development of compassion fatigue. Genetic counselors who were classified as being at moderate-to-high risk for burnout were found to be more than three times as likely to experience compassion fatigue when compared to those with low-to-moderate risk for burnout (Injeyan et al. 2011). Similarly, Bernhardt et al. (2009) found the most significant predictors of burnout in genetic service providers were distress and lack of meaning derived from patient care. Lee et al. (2015) determined several predictors that may influence a genetic counselor’s level of compassion fatigue, including a person’s level of burnout, compassion satisfaction, trait anxiety, and whether or not they were an ethnicity other than Caucasian. Genetic counselors are predominately females less than 40 years old and these characteristics have been associated with clinician burnout in genetic counselors and other healthcare providers (Campbell et al. 2001; Freeborn 2001; McMurray et al. 2000; NSGC 2014). Additionally, research in the genetic counseling field has suggested certain personality traits are linked to an increased risk of experiencing the symptoms associated with compassion fatigue (Injeyan et al. 2011). Personality characteristics including: a desire to be liked, perfectionistic tendencies, lower optimism levels, and an external locus of control can be predictive of a genetic counselor’s risk of developing compassion fatigue (Benoit et al. 2007; Injeyan et al. 2011; Li and Chung 2009; Udipi et al. 2008). However, Lee et al. (2015) found that country of practice, years of experience, compassion fatigue familiarity, or relationship status did not play a role in predicting whether or not an individual is at increased risk of developing compassion fatigue.

Genetic Counseling Supervision

Supervision is an educational technique that has been practiced for many years in the genetic counseling field, along with other medical specialties, including the mental health field (Goodyear and Bernard 1998). While many definitions of supervision exist, Goodyear and Bernard (1998) provide one of the most widely accepted definitions currently in the genetic counseling literature, indicating that supervision is an intervention provided by a more experienced individual to a less experienced individual in a particular profession with the purpose of promoting the less experienced individual's professional development (Bernard and Goodyear 2014). Furthermore, Loganbill et al. (1982) describe supervision as an integrated process between two people, where one person provides personalized attention to the other in order to convey skills and knowledge (Loganbill et al. 1982). Supervisors face many challenges when providing supervision, including balancing the needs of the supervisee and the patient (Bernard and Goodyear 2014). Supervisees need to acquire experience performing clinical skills in order to eventually practice independently. Patients, on the other hand, must be provided a standard level of care to ensure their health. In instances where the supervisee is unable to progress towards independent practice, the supervisor may function as a gatekeeper for entrance into the profession (Bernard and Goodyear 2014). The supervisor's role, therefore, has important consequences for both the supervisee's career and the patient's care.

Certain factors related to supervision have the potential to impact burnout or compassion fatigue and therefore, the supervisor role may affect a genetic counselor's likelihood of developing compassion fatigue. Previous studies have shown that supervisors indicated there was a lack of training regarding supervision and how to complete the process effectively which lead to the supervision of students being more difficult (Atzinger et al. 2014). Many supervisors learn supervision practices informally through trial and error, student feedback and consulting with colleagues (Hendrickson et al. 2002). However, fewer supervisors report learning about supervision formally through workshops or seminars (Atzinger et al. 2014). Those supervisors who had participated in two or more formal training courses perceived themselves as being more confident and competent in their role as a supervisor as compared to those who had only utilized informal methods of supervision training (Atzinger et al. 2014).

Additionally, supervisors also noted that the supervision process overall can, in some cases, create a larger workload and time commitment than when not taking on students. Additional time is needed if the student being supervised is less motivated or has fewer skills compared to other students, in general. Conversely, supervisors reported that supervising students has the potential to decrease the workload if a student

is more motivated or has a larger skill set (Uhlmann et al. 2009). Lindh et al. (2003) found similar results regarding supervisors' increased workload and exposure to problematic student performance. Furthermore, these supervisors may be exposed to a student's persistent anxiety which may lead to an increased time commitment and workload.

At this time no study has explored the relationship between a particular job duty such as student supervision and compassion fatigue and burnout. Given that many genetic counselors will act as clinical supervisors during their career and the vital importance of this role to the training of future genetic counselors, it is important to understand how this role may impact an individual's burnout and compassion fatigue. Because genetic counselors are at increased risk of developing both compassion fatigue and burnout, which may influence whether they consider leaving the field, it is important to understand if supervision is positively or negatively associated with the risk for these phenomena.

Methods

Approval for this study was obtained from the Cincinnati Children's Hospital Medical Center and University of Cincinnati's Institutional Review Boards in May 2014.

Participants

All genetic counselors who are new or full members of the National Society of Genetic Counselors (NSGC) were invited to participate in the study through an email sent out through the NSGC Student Research Survey Program on August 26, 2014. A reminder email was sent 2 weeks later. The email contained a link to the online survey and was sent to approximately 2959 genetic counselors. The survey was closed on October 13, 2014.

Instrumentation

The online survey included the Professional Quality of Life Scale (ProQOL; Stamm 2010), the State-Trait Anxiety Inventory (STAI; Spielberger et al. 1983), and study-specific questions regarding clinical experience, supervision experience for genetic counseling students in a clinical setting, and demographic questions.

Professional Quality of Life Scale The ProQOL (Stamm 2010) was used in this study to assess the levels of risk for burnout, compassion satisfaction and secondary traumatic stress of genetic counselors. This scale was developed in the late 1980s by Charles Figley and Henry Stamm and has been revised and updated over time. The ProQOL is one of the most commonly used measures of positive and negative effects of

working with individuals who have experienced stressful circumstances (Stamm 2010). The ProQOL contains 3 distinct subscales that measure risk for compassion satisfaction, burnout, and secondary traumatic stress. The compassion satisfaction subscale assesses “the pleasure you derive from being able to do your work well” (Stamm 2010, p. 10). The burnout subscale assesses “feelings of hopelessness and difficulties in dealing with work, or in doing one’s job effectively” (Stamm 2010, p. 10). The secondary traumatic stress subscale assesses “work-related, secondary exposure to people who have experienced extremely or traumatically stressful events” (Stamm 2010, p. 10). The ProQOL Version 5 has alpha reliabilities of 0.88 (compassion satisfaction), 0.75 (burnout), and 0.81 (secondary traumatic stress; Stamm 2010). The ProQOL has been used in other studies investigating compassion fatigue, burnout, compassion satisfaction, and secondary traumatic stress in the genetic counseling field (Injeyan et al. 2011; Lee et al. 2015).

The ProQOL contains 30 items which specifically address an individual’s level of compassion satisfaction, burnout, and secondary traumatic stress (labeled the compassion fatigue scale in previous versions of the ProQOL). Each item is based on a 5 point Likert scale (1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = very often). The ProQOL provides a separate score for each subscale measured. Subscale scores were converted from raw scores to *T*-scores to allow for comparison of scores across different versions of the ProQOL. The raw subscale scores can range from 10 to 50, with a higher score indicating a greater risk of developing compassion satisfaction, burnout, or secondary traumatic stress. *T*-scores can range from 19 to 77 depending on the subscale.

Within the survey, participants were instructed that whenever the word “counsel” appeared in the ProQOL, it referred to providing genetic counseling services. Additionally, they were instructed that “trauma” or “traumatic stress” could refer to any type of extreme stress genetic counseling patients are experiencing.

State-Trait Anxiety Inventory (STAI) Since anxiety has been previously shown to impact scores on the ProQOL in genetic counselors (Lee et al. 2015), a measure of anxiety was included in order to control for this variable. The ideas of state and trait anxiety were initially introduced in the 1960s by Cattell (Cattell and Scheier 1961). State-Anxiety (S-Anxiety) refers to a reaction or process that occurs at a specific time and with a certain level of anxiety. Conversely, Trait-Anxiety (T-Anxiety) refers to the difference in individuals and how they may perceive and respond to different stressful situations with an overall elevation in their S-Anxiety. T-Anxiety may also be a predictor of whether S-Anxiety will be experienced by an individual in the future. When an individual has a higher T-Anxiety, there is a greater likelihood that the individual will have a greater elevation in his S-Anxiety when he is in a

threatening situation. Previous studies have shown that trait-anxiety levels influence an individual’s ProQOL scores (Lee et al. 2015).

The State-Trait Anxiety Inventory (STAI) contains two subscales (Spielberger et al. 1983). The first is the S-Anxiety scale which contains 20 questions to assess an individual’s feelings “right now, at this moment.” The second subscale is the T-Anxiety scale which contains 20 questions to assess an individual’s feelings in general. Both scales were scored on a 4 point Likert scale (State Anxiety 1 = not at all; 2 = somewhat; 3 = moderately so; 4 = very much so and Trait Anxiety 1 = almost never; 2 = sometimes; 3 = often; 4 = almost always). Scores from the S-Anxiety scale and T-Anxiety scale were added together separately to obtain two final scores. Scores can range from 20 to 80. A higher score indicates a higher level of state or trait anxiety. The STAI has been shown to have a strong reliability and good construct validity (Spielberger et al. 1983).

Other Items Additional questions in the survey assessed participants’ supervision status, demographics, and clinical experience. Those individuals who indicated they had supervised genetic counseling students in the past 6 months were asked additional questions about their supervision experience. Demographic questions assessed gender, race, age, highest education level, primary area of practice, and certification status as a genetic counselor. One open-ended question was included which asked participants to reflect on their experiences and opinions of compassion fatigue and burnout. The questionnaire was pretested for face validity by two genetic counselors who were not involved in designing the survey. Based on comments from this pretesting, minor modifications to the questionnaire were made.

Analysis

Descriptive statistics were used to summarize the demographic characteristics and genetic counseling practices of the study population. Frequency (percentage) was reported for categorical variables while mean and standard deviation were reported for continuous variables.

Fisher exact test was used to test demographic distribution difference between supervisors and non-supervisors. Comparison of the mean ProQOL subscale score of current study population to a reference population (or other study population) was evaluated by *t* test. Linear regression model was used to compare the mean difference of ProQOL subscale score/STAI score between supervisors and non-supervisors. For demographic characteristics and STAI score that differ between supervisors and non-supervisors, linear regression model was used to test their associations with ProQOL score and those variables of nominal significance ($p < .05$) were included as covariates in the linear regression model of

ProQOL score on supervisor status to control for potential confounders. Linear regression model was also used to examine the relationship between ProQOL subscale score and confidence in roles as clinical supervisors for genetic counseling students. Confidence (level of agreement) was treated as a continuous predictor (Disagree = 1; Neither agree or disagree = 2; Agree = 3; Strongly agree = 4). Our main hypothesis involved the comparison of the 3 subscales of the ProQOL between supervisors and non-supervisors. Given that the subscales are not independent measures, a correlation adjusted Bonferroni correction (0.029) was considered significant for comparisons between groups for the ProQOL. Given the exploratory nature of this study, a nominal p value threshold ($p < 0.05$) was applied for significance for all other comparisons. The analysis was performed in R (R Core Team 2013).

For the open-ended question, an inductive approach to analysis was used where the themes arose from the data itself rather than fitting predetermined categories. The primary investigator (KA) performed open coding and grouped the responses into categories based on their similarities in themes (Denzin and Lincoln 2000). Axial-coding was done inclusively, where a statement that contained multiple themes was ascertained. Upon conclusion of axial coding, frequencies were determined for each theme.

Results

Of the 2959 surveys sent, a total of 391 surveys were completed for an overall response rate of 13 %. Three hundred and twenty respondents completed the majority of the online questionnaire and were included in data analyses. Sixty-four responses were excluded from the analyses because they did not complete the ProQOL or STAI.

Demographics

Demographics of the sample are outlined in Table 1. Participants ranged in age from 23 to 65 ($M = 32.9$, $SD = 8.6$). They were predominantly female and Caucasian/White. The vast majority of participants had a master's degree and were board certified. The top three areas of clinical practice were cancer, prenatal, and pediatrics. Participants primarily worked at university medical centers or private hospitals/facilities. Supervisors accounted for 52.8 % (169/320) of the participants.

Demographic distributions were compared between supervisors and non-supervisors (Table 1). Supervisors were found to be significantly older ($p = 0.003$) and have more years of experience than non-supervisors ($p < 0.001$). In addition, supervisors were more likely to practice in pediatrics while non-supervisors were more likely to practice in cancer genetics ($p = 0.02$). Supervisors were also more likely to be certified

($p < 0.001$) and work in a university medical center while non-supervisors were more likely to work in a private hospital or facility ($p < 0.001$).

State Trait Anxiety Inventory

The mean ($\pm sd$) state and trait anxiety scores for the overall sample population were 36.46 (± 9.87) and 37.73 (± 9.06) respectively (Table 2). The mean state anxiety scores were comparable for supervisors and non-supervisors (36.72 ± 9.39 vs. 36.17 ± 10.41 , $R^2 = 0.001$, $p = 0.63$, Table 2). The mean trait anxiety score was higher for supervisors than non-supervisors (38.74 ± 8.80 vs. 36.63 ± 9.25 , $t(304) = 2.06$, $R^2 = 0.014$, $p = .040$, Table 2) although the effect size is small.

Professional Quality of Life Scale

Compassion Satisfaction Subscale

The mean compassion satisfaction score for the sample population was 54.08, which was significantly greater ($p < .001$) than the mean score 50 of the reference population in the ProQOL manual (version 5) and ranked 61st percentile. Compared to the study population in Lee et al. (2015), the mean compassion satisfaction score in the current study was lower ($p < .001$). Trait anxiety levels were highly negatively correlated with compassion satisfaction scores ($r = -0.56$, $p < .001$). Certified genetic counselors had lower compassion satisfaction scores (53.73 ± 6.70 vs. 56.91 ± 6.50 ; $p = 0.004$) than noncertified genetic counselors. Those who self-identified as non-supervisors had a slightly higher mean compassion satisfaction score than those who self-identified as supervisors (54.98 ± 7.03 vs. 53.27 ± 6.62 , $R^2 = 0.016$, $t(318) = 2.24$, $p = .026$; Table 2). However, after controlling for trait-anxiety and certification status, there were no differences in mean compassion satisfaction score between supervisors and non-supervisors ($p = 0.88$).

For supervisors, we explored whether specific supervision factors might be associated with compassion satisfaction scores. One factor that was assessed was self-reported confidence in the supervisor role. One question on the survey asked participants how strongly they identified with the following statement: "Overall, I feel confident in my role as a clinical supervisor for genetic counseling students." 28.4 % (48/169) of the participants indicated they strongly agreed with the statement, 61.5 % (104/169) agreed with the statement, 7.69 % (13/169) neither agreed nor disagreed with the statement, and 2.37 % (4/169) indicated they disagreed with the statement. No participants indicated they strongly disagreed with the statement. The confidence they felt in their roles as clinical supervisors for genetic counseling students was linearly associated with compassion satisfaction score ($r = 0.37$, $p < .001$, Fig. 1), with the highest mean score of 56.4 for

Table 1 Participant demographic characteristics

Characteristic	Entire population		Supervisors		Non-supervisors		P value ^d
	N	(%)	N	(%)	N	(%)	
Gender							
Male	7	(2.3)	4	(2.5)	3	(2.0)	1
Female	302	(97.7)	158	(97.5)	144	(98.0)	
Age							
<25	13	(4.4)	1	(0.7)	12	(8.2)	0.003
25–39	225	(75.8)	121	(80.7)	104	(70.7)	
≥40	59	(19.8)	28	(18.7)	31	(21.1)	
Race							
Caucasian/white	290	(91.5)	152	(91.6)	138	(91.4)	0.76
African american/black	5	(1.6)	2	(1.2)	3	(2.0)	
Biracial/multiracial	5	(1.6)	3	(1.8)	2	(1.3)	
Hispanic/latino	4	(1.3)	1	(0.6)	3	(2.0)	
Other ^a	13	(4.1)	8	(4.8)	5	(3.3)	
Highest education degree							
MA/MS/MSc/ScM	305	(98.4)	160	(98.8)	145	(98.0)	0.60
Ph.D	3	(1.0)	1	(0.6)	2	(1.3)	
MD	1	(0.3)	1	(0.6)	0	(0.0)	
Other (MSSW)	1	(0.3)	0	(0.0)	1	(0.7)	
Certified genetic counselors							
Yes	264	(86.0)	157	(97.5)	107	(73.3)	<0.001
No	43	(14.0)	4	(2.5)	39	(26.7)	
Primary area of practice							
Cancer genetics	99	(31.9)	41	(25.3)	58	(39.2)	0.02
Prenatal	93	(30.0)	49	(30.2)	44	(29.7)	
Pediatrics	76	(24.5)	50	(30.9)	26	(17.6)	
Adult	5	(1.6)	4	(2.5)	1	(0.7)	
Other ^b	37	(11.9)	18	(11.1)	19	(12.8)	
Primary work area							
University medical center	142	(45.8)	94	(57)	48	(35.0)	<0.001
Private hospital or facility	117	(37.7)	49	(29.7)	68	(49.6)	
Group private practice	10	(3.2)	2	(1.2)	8	(5.8)	
Health maintenance organization	7	(2.3)	6	(3.6)	1	(0.7)	
Diagnostic laboratory	2	(0.6)	0	(0.0)	2	(1.5)	
Federal, state or county office	1	(0.3)	0	(0.0)	1	(0.7)	
Other ^c	23	(7.4)	14	(8.5)	9	(6.6)	
Years of clinical experience							
<1	6	(1.9)	0	(0.0)	6	(4.0)	<0.001
1–4	168	(52.5)	76	(45.0)	92	(60.9)	
5–9	65	(20.3)	49	(29.0)	16	(10.6)	
10–14	40	(12.5)	23	(13.6)	17	(11.3)	
15–19	19	(5.9)	10	(5.9)	9	(6.0)	
20–25	11	(3.4)	5	(3)	6	(4.0)	
>25	11	(3.4)	6	(3.6)	5	(3.3)	

^a Other includes Asian and Ashkenazi

^b Other includes those who practice in multiple specialties, cardiology, research, neurogenetics and specialty clinics

^c Other included public hospital, government facility and outpatient center

^d Demographic distributions were compared between supervisors and non-supervisors. *P* values were obtained by fisher's exact test. Nominal significance were applied

Table 2 Comparison of ProQOL scores and STAI scores by supervisor status

	Entire population ^a (N = 320)	Supervisors ^a (N = 169)	Non-supervisors ^a (N = 151)	R-squared ^b	Test statistic ^b	P value ^b	Post-hoc power ^c
ProQOL							
Compassion satisfaction	54.08 ± 6.86	53.27 ± 6.62	54.98 ± 7.03	0.016	t(318) = 2.24	0.026	0.61
Burnout	53.04 ± 7.21	53.73 ± 6.93	52.27 ± 7.45	0.010	t(318) = 1.82	0.07	0.44
Traumatic stress	59.64 ± 6.33	59.79 ± 6.54	59.48 ± 6.10	0.001	t(318) = 0.44	0.66	0.07
STAI							
State anxiety	36.46 ± 9.87	36.72 ± 9.39	36.17 ± 10.41	0.001	t(315) = 0.49	0.63	0.08
Trait anxiety	37.73 ± 9.06	38.74 ± 8.80	36.63 ± 9.25	0.014	t(310) = 2.07	0.04	0.54

^a Values are mean ± sd

^b Mean differences were compared between supervisors and non-supervisors by linear regression. R-squared, test statistics and *P* values were reported

^c Post-hoc power was computed based on the observed effect size and sample size

participants with strong agreement and the lowest mean score of 45.2 for participants with disagreement. The association remained significant after controlling for years of clinical experience, years of supervision experience, and trait anxiety ($p = .004$). Another factor that was assessed was how current supervisors felt their supervisor role impacted their level of burnout or compassion fatigue. Of the 169 supervisors who responded to this question, 31.3 % (51/163) indicated there was no effect, 40.5 % (66/163) said that clinical supervision increases their burnout/compassion fatigue, 6.75 % (11/163) said that clinical supervision decreases their burnout/compassion fatigue and 21.5 % (35/163) were unsure if there was an effect. Compassion satisfaction scores and the other subscale scores were compared between those who indicated that clinical supervision increased their burnout/compassion fatigue and those who indicated that clinical supervision decreased their burnout/compassion fatigue (Table 3). Those who indicated their clinical supervisor role increased their

burnout/compassion fatigue had lower compassion satisfaction scores ($p = .003$, Table 3). No difference was detected after controlling for years of clinical experience, years of supervision experience and trait anxiety ($p = 0.09$, Table 3).

Burnout Subscale

The mean burnout score for the sample population was 53.04 which was significantly greater ($p < .001$) than the mean score 50 of the reference population in the ProQOL manual (version 5) and ranked the 66th percentile. Compared to the study population in Lee et al. (2015), the mean burnout score in the current study was higher ($p < .001$). Trait anxiety levels were highly positively associated with burnout scores ($r = 0.69$, $p < .001$). Certified genetic counselors had higher burnout score (53.57 ± 7.09 vs. 49.74 ± 6.86 ; $p = 0.001$) than noncertified genetic counselors. No significant differences between supervisors and non-supervisors were found in the burnout subscale. For supervisors we explored whether specific supervision factors might be associated with burnout scores, as was done for compassion satisfaction scores. Again, not surprisingly, decreased burnout scores were found to be associated with higher levels of self-reported confidence in the supervisor role ($r = -0.31$, $p < .001$, Fig. 1). The association disappeared after controlling for years of clinical experience, years of supervision experience and trait anxiety ($p = 0.20$). Current supervisors who indicated their clinical supervisor role increased their burnout/compassion fatigue had higher burnout scores ($R^2 = 0.09$, $p = .009$), but no difference was detected after controlling for years of clinical experience, years of supervision experience and trait anxiety ($p = 0.30$, Table 3).

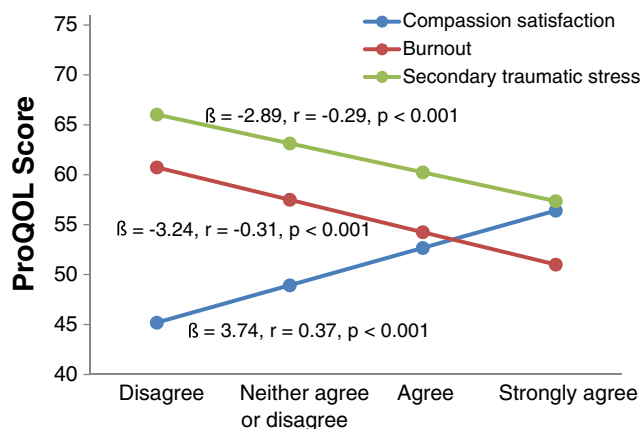


Fig. 1 ProQOL score was fitted on Level of agreement with statement (confidence): “Overall, I feel confident in my role as a clinical supervisor for genetic counseling students.” Confidence (Level of agreement) was treated as a continuous predictor (Disagree = 1; Neither agree or disagree = 2; Agree = 3; Strongly agree = 4)

Secondary Traumatic Stress Subscale

The mean secondary traumatic stress score for the sample population was 59.64, which was significantly greater

Table 3 Comparison of mean ProQOL sub-scale scores for supervisors who perceive the supervisory role to either increase or decrease their compassion fatigue and burnout

Response	Compassion satisfaction ^a			Burnout ^b			Secondary traumatic stress		
	Mean	Unadj p	Adj p	Mean	Unadj p	Adj p	Mean	Unadj p	Adj p
Increases (<i>n</i> = 66)*	51.5	0.003	0.09	55.7	0.009	0.30	60.7	0.054	0.90
Decreases (<i>n</i> = 11)*	58.0			49.5			56.5		

Unadj p means unadjusted *p* value; Adj p means adjusted *p* value and was obtained by linear regression after controlling for years of clinical experience, years of supervision experience and trait anxiety

*Supervisors were asked how they perceived supervision to impact their compassion fatigue and burnout. A total of 77 supervisors answered that the supervision role either increased or decreased compassion fatigue and burnout

^a Higher scores on the compassion satisfaction sub-scale indicate a higher chance for satisfaction derived from patient care

^b Higher scores on the burnout sub-scale indicate a higher risk for burnout

($p < 0.001$) than the mean score 50 of the reference population in ProQOL manual (version 5) and was in the 83rd percentile. Trait anxiety levels were positively associated with secondary traumatic stress scores ($r = 0.52$, $p < .001$). No significant differences between supervisors and non-supervisors were found in the secondary traumatic stress subscale ($p = 0.66$, Table 2). Lower secondary traumatic stress scores were associated with more years of supervision experience ($r = -0.21$, $p = .0072$). Decreased secondary traumatic stress scores were found to be associated with higher levels of confidence in the supervisor role ($r = -0.29$, $p < .001$, Fig. 1). The association disappeared after controlling for years of clinical experience, years of supervision experience and trait anxiety ($p = 0.16$). No difference was found for secondary traumatic stress scores between supervisors who felt their supervisor role increase their level of burnout or compassion fatigue and supervisors who felt their supervisor role decrease their level of burnout or compassion fatigue ($p = 0.054$, Table 3).

Age, primary area of practice, primary work area, and years of clinical experience were not associated with any ProQOL subscale scores.

Open-Ended Responses

Current supervisors were invited to provide any additional comments regarding the impact of supervision on compassion fatigue and burnout. Ninety-seven individuals (59.9 %) responded. Examples of responses include:

I actually feel that providing clinical supervision reduces my level of burnout/compassion fatigue. I think that supervising students is invigorating and is a good reminder of how much I love the genetic counseling field. It forces me to stay on my toes and become more involved with the University and other, non-clinical components of the field. Working with students boosts my self-confidence and makes me feel more competent and capable in my abilities as a genetic counselor.

Supervision increases my burnout for two reasons. First, is simply the time commitment. I wish I had more time to devote to my students but I just don't have it. Second, and this varies from student to student, but I get frustrated by the lack of motivation of some of my students. Some of them seem to think they know it all and don't really care about my feedback. How am I supposed to be motivated to help them when they don't want my help?

Responses could be classified as having a positive impact on compassion fatigue/burnout, a negative impact, or a neutral impact. Statements were further grouped together into themes under each of these large categories. Themes with a positive impact included: enthusiasm, reflective practice, reduces burnout / compassion fatigue. Themes with a negative impact included: stress/providing criticism, workload/time, increases burnout / compassion fatigue and support for patient and student. Themes with a neutral impact included: depends on student, does not affect burnout / compassion fatigue, do not know if it affects burnout/ compassion fatigue, and burnout/ compassion fatigue for other reasons. Participants' responses could contain multiple types of impact and themes. A summary of the number of responses which fell into each theme and example quotes are provided in Table 4.

Discussion

Overall, this exploratory study found that currently providing supervision itself did not lead to differences in compassion fatigue or burnout among genetic counselors. Genetic counselors, overall, in this study had high risks for compassion satisfaction, secondary traumatic stress, and burnout compared to the reference population in the ProQOL manual (version 5). This was consistent with previous studies that have found high levels of compassion fatigue and burnout among genetic service providers and particularly genetic counselors (Bernhardt et al. 2009). Scores in the current study, however, were lower for compassion satisfaction ($p < .001$) and higher

Table 4 Summary of open-ended responses regarding impact of supervision on level of burnout and compassion fatigue ($N = 97$)

Theme	n	Example quote
Positive impact		
Enthusiasm	17	“Having students adds a fresh perspective. I feel happy that I helped a new student learn and go out into the world to start their career.”
Reflective practice	9	“I find that working with a student through their own compassion fatigue and difficult sessions helps me identify new coping mechanisms and ways to separate my personal life from the challenges with my clients.”
Reduces burnout/compassion fatigue	11	“I actually feel that providing clinical supervision reduces my level of burnout/compassion fatigue.”
Negative impact		
Stress/providing criticism	23	“They add a level of stress and responsibility to my job and I always need to be ‘on’ when they are observing me.”
Workload/time	55	“While I enjoy working with students, there really is no decrease in clinical load to reflect the increase in time/effort spent mentoring trainees.”
Increases burnout/compassion fatigue	15	“Supervision is an added responsibility, which is not technically part of my job description. When students exhibit disrespect or feelings of entitlement during their rotation it increases my level of burnout when working with them and then future students.”
Support for patient and student	5	“You need to be aware of one more person’s reactions to patients and be sure the student is mentally and emotionally handling patient situations. This can be exhausting at times.”
Neutral Impact		
Depends on student	6	“I think the type of student makes a huge difference.”
Does not affect burnout/compassion fatigue	6	“I really only have counseled a few students, and honestly their presence does not help or hurt my feelings of burnout.”
Do not know if it affects burnout/compassion fatigue	2	“I am in the process of supervising my first student, so I do not know yet.”
Burnout/compassion fatigue for other reasons	5	“I feel more burn out for additional stuff not related to genetic counseling i.e. administrative stuff etc.”

for burnout ($p < .001$) when compared to the study population in Lee et al. (2015). While there were initial differences between current supervisors and non-supervisors in compassion satisfaction, these differences were completely mediated by other factors. While burnout and compassion fatigue continue to be an issue that needs to be addressed in the genetic counseling field, these initial findings do not support the idea that actively providing supervision to genetic counseling students is associated with a significant increase in this risk on its own.

While the demographics of the sample in this study were similar to those of the genetic counseling field in general (NSGC 2014), there were some demographic differences between current supervisors and non-supervisors. Some of these were logical differences based on the role itself. Current supervisors were more likely to be certified which is a requirement for core cases under the program accreditation standards (ACGC 2013). They also had significantly more clinical experience which is recommended under these same standards. The age differences between the groups may also be related to years of experience. The fact that more supervisors work in university medical centers may be related to the fact that this is

where programs are located and therefore, individuals in this setting are more likely to be asked or required to supervise students. Of these demographic factors, only certification status was related to ProQOL scores. However, controlling for certification status did not impact the initial differences in compassion satisfaction between current supervisors and non-supervisors.

Trait anxiety, a measure of how anxious a person is in general and how they respond to stressful situations, has been previously associated with higher risk for burnout or compassion fatigue both in general and among genetic counselors (Lee et al. 2015). The mean state and trait anxiety scores in this study were similar to those previously reported for genetic counselors (Lee et al. 2015). Interestingly, in this study, current supervisors had significantly higher levels of trait anxiety than non-supervisors, although the effect size was small. It is, in fact, this difference in trait anxiety that accounts for the difference in compassion satisfaction seen between supervisors and non-supervisors. Individuals who have higher trait anxiety are more likely to perceive situations as stressful and, therefore, more likely to exhibit state-anxiety. Because current supervisors were found to have higher trait anxiety

than non-supervisors, the supervisors in this study may be more likely to perceive supervision as stressful and to experience state-anxiety when providing supervision. The reason for the difference in trait anxiety between supervisors and non-supervisors is unclear; however, due to the small effect size, if this study was repeated with a different sample population, the same differences in trait anxiety may not be identified.

Since genetic counseling programs rely on supervisors in order to effectively train the next generation of genetic counselors, it is reassuring that performing this role, by itself, does not appear to lead to increased risk of burnout or compassion fatigue. However, genetic counseling programs still have an interest in retaining supervisors and understanding what may cause a supervisor to experience more compassion fatigue or burnout. Within current supervisors, years of supervision experience was found to be associated with lower risk for secondary traumatic stress. This could be due to many factors, including the possibility that as an individual's supervision experience (in years) increases, the genetic counselor becomes more comfortable and adjusted to the supervision role. Additionally, as the amount of time a genetic counselor has been in a supervision role increases, the genetic counselor may feel more confident in their role which is consistent with what has been reported in a previous study (Atzinger et al. 2014). This possibility is supported by the fact that current supervisors' self-reported level of confidence was also related to all three ProQOL subscale scores (Fig. 1). Particularly, supervisors with more confidence in their role had higher scores for compassion satisfaction even independent of trait anxiety levels. Thus, when a genetic counselor feels comfortable in the role of supervisor, they are more likely to experience satisfaction from their work.

Finding a way for supervisors to have more confidence in their role may, therefore, be a way that genetic counseling programs can increase the compassion satisfaction that supervisors feel. While there is currently no research completed to determine if an individual's burnout, compassion fatigue, or compassion satisfaction impacts the quality of their supervision, it seems likely that supervisors are more likely to continue to supervise if they are satisfied with their role. In addition to supervision experience, previous studies have found that those genetic counselors who had supervision training tended to report greater confidence and identify as a supervisor (Atzinger et al. 2014). Thus, supervision training may be a way to help with compassion satisfaction and secondary traumatic stress for new supervisors. This training could address recently published supervision competencies (Eubanks Higgins et al. 2013). Finley et al. (2015) found supervisors had high ratings of self-efficacy on competencies related to goal-setting and feedback. Although supervisors, overall, had high self-efficacy ratings in these categories, several competencies were noted to be particularly challenging for some

supervisors. Supervision training could focus on those competencies already noted to be challenging, which may increase supervisors' confidence in these roles. In addition to focusing on genetic counseling supervision competencies, training could also include elements relating to compassion fatigue and burnout and ways to recognize and seek help should these concerns arise. Jungbluth et al. (2011) identified high levels of trait anxiety in genetic counseling graduate students. It was suggested that genetic counseling programs address stress in students by making students aware of resources such as counseling services (Jungbluth et al. 2011). Genetic counseling programs may also want to assess their supervisors' trait-anxiety. Programs could begin to address supervisor trait-anxiety by making supervisors aware of trait anxiety, its association with compassion fatigue and burnout, and resources, such as counseling services, to help individual supervisors cope with high trait anxiety levels.

There was some indication in this study that current genetic counseling supervisors do know when the supervision role is leading to more burnout. Current supervisors who indicated the supervisor role decreased their levels of compassion fatigue and burnout did have higher levels of compassion satisfaction and lower levels of burnout and secondary traumatic stress. The themes of enthusiasm and reflective practice identified in the open-ended questions were noted by several current supervisors as reasons supervision had a positive impact on their compassion fatigue / burnout. At the other end of the spectrum, active supervisors felt supervision negatively impacted their compassion fatigue/burnout did indeed have lower levels of compassion satisfaction and higher levels of burnout. Bernard and Goodyear (2014) note that two of the many challenges faced by supervisors included balancing the needs of the student with the needs of the patient and, at times, needing to act as gatekeepers to the profession. These challenges were also expressed in the open-ended responses by some supervisors in this study. Genetic counseling programs may want to provide training or anticipatory guidance relating to these themes for their supervisors as a way to mediate these challenges when providing supervision.

Genetic counselors may have the ability to self-identify when they are at greater risk of developing symptoms and feelings of compassion fatigue and burnout related to supervision. Alternatively, those supervisors who are already experiencing the symptoms of burnout may see supervision as an added stress to their job. The impact of the supervision role on compassion fatigue and burnout is not uniform; there is a different impact on different people. From a genetic counseling program standpoint, it may be helpful to screen genetic counselors for an increased risk of developing compassion fatigue and burnout or at least discuss this issue with potential supervisors and then provide resources if indicated.

Limitations & Future Studies

There are several potential limitations to this study. Supervisors in this study were defined as counselors who had supervised within the last 6 months. This means individuals who were not currently supervising students were included in the non-supervisor group. The two groups in this study may not be completely distinct and therefore, it may be difficult to distinguish differences between them. There could be a variety of reasons individuals who have supervised in the past are not currently supervising students. Some individuals may not have had the opportunity to work with any students in the past 6 months if they supervise a limited number of students per year. There is also the possibility that past supervisors moved out of the role because of the impact it had on their compassion fatigue and burnout. This study, therefore, can only assess the association between compassion fatigue and burnout and actively providing supervision. The ProQOL relies on a respondent to self-report their behaviors and feelings. If respondents are not truthful when responding to the questionnaire, then there is the potential that the results are not truly representative. This study had an estimated response rate of 13 %. This is a typical response rate for this population and the sample was demographically similar to the profession as a whole as reported in the Professional Status Survey (NSGC 2014). However, given this low response rate, the study is exploratory and the results of this current study may not be generalizable to the entire genetic counseling population. This study was advertised as being about compassion fatigue. Thus, people who feel they are experiencing compassion fatigue may have been more likely to respond. Additionally, this study was designed to be a cross-sectional study. Therefore, we surveyed genetic counselors at one time point. The time at which the survey was completed may influence their responses to the survey questions.

This study was an exploratory study with a small sample size and should be replicated in the future with a larger sample size. Only genetic counselors that were currently practicing and supervising in a clinical setting were included. Because reasons supervisors who were either not currently supervising or may have chosen to stop supervising were not investigated, future studies should be conducted to determine if compassion fatigue and burnout are factors associated with 1) leaving supervision, 2) suspending supervision, 3) not entering into the supervision role at all. Future studies should also investigate supervisors in non-clinical roles as it may increase the understanding of the impact of the supervision role on genetic counselors and whether or not there are additional factors that influence a genetic counselor's development of compassion fatigue and burnout including supervision/management roles in those settings. Additionally, future studies should be completed that examine the role of training for supervision that genetic counselors receive on an individual's compassion fatigue and

burnout. This could allow the genetic counseling community to consider how supervisors are currently trained and what additional training may be helpful. Future studies could also evaluate how a supervisor's burnout impacts the effectiveness of the supervision provided.

Conclusion

In this exploratory study, current genetic counseling supervisors have similar levels of compassion satisfaction, burnout, and secondary traumatic stress as compared to non-supervisors when controlling for trait anxiety. The supervision role by itself was not independently associated with the risk for compassion fatigue and burnout among genetic counselors. Within current supervisors, two associations with the components of compassion fatigue were noted. First, lack of experience was associated with increased secondary traumatic stress. Second, decreased confidence in the supervision role was associated with decreased compassion satisfaction. To combat these aspects of compassion fatigue in supervisors, programs could consider offering training to increase supervisors' confidence and help provide resources to address compassion fatigue and trait anxiety. In addition, in this study, current supervisors were often able to identify if they associated supervision with increased compassion fatigue and burnout, which may help programs to identify those at risk as well.

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Compliance with Ethical Standards

Conflict of Interest Katlin Allsbrook, Carrie Atzinger, Hua He, Chalee Engelhard, Geoffrey Yager and Katie Wusik declare they have no conflict of interest.

Human Studies and Informed Consent All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

Animal Studies No animal studies were carried out by the authors for this article.

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