University of Cincinnati

Date: 5/2/2012

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

It is entitled:

The Impact of Supervision Training on Genetic Counselor's Supervisory Identity Development

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The Impact of Supervision Training on Genetic Counselor's Supervisory Identity Development

A thesis submitted to the

Graduate School

of the University of Cincinnati

in partial fulfillment of

requirements for the degree of

Master of Science

of the College of Medicine

June 2012

by

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B.S. Miami University, 2008

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Abstract

Supervisory identity development can be defined as the extent to which a supervisor is both confident and competent in their current supervisory skills and professional identity. Despite the importance of supervision in the training of genetic counseling students, there are no formal supervision guidelines for genetic counselors who supervise students. The effect of formal supervision training on supervisory identity development has been studied in other counseling fields such as psychology. However, limited research exists regarding how formal supervision training and other variables impact genetic counselor's supervisory identity development. The purpose of this study was to investigate the impact of experience and supervision training on supervisory identity development in the field of genetic counseling and to explore genetic counselor's perceptions of supervision training needs. Genetic counselors were anonymously surveyed regarding their clinical and supervision experience and whether or not they had formal methods of supervision training. Results showed that all three variables seem to play a role in supervisory identity development. Two or more methods of formal supervision training were shown to significantly increase supervisory identity development in counselors who have less than ten years of experience supervising genetic counseling students in a clinical setting. A majority of genetic counselors were interested in receiving supervision training but noted many barriers. It is concluded that formal supervision training should be targeted to those early in their career. Further studies could be useful to identify what course content is currently being taught in supervision training programs for genetic counselors.

Acknowledgements

I would like to thank the members of my research advisory committee for all their guidance and support throughout this project. Ms. Carrie Atzinger and Ms. Katie Wusik provided constant support and contributions throughout multiple revisions of the manuscript. Dr. Catherine Ramstetter provided statistical contributions and helped me not only complete the statistical analysis, but taught me how to perform statistical tests and interpret results for my growing professional development. Dr. Geoffrey Yager was extremely helpful in providing us with knowledge about what other counseling professions are currently doing in the realm of supervision. I would also like to thank Dr. Melanie Myers for the guidance and support she provided to our class in research design to help get our thesis projects started. Lastly, I would like to thank my classmates, family, and friends for all of their support and input.

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List of Abbreviations

Certified Genetic Counselor (CGC)

National Society of Genetic Counselors (NSGC)

American Board of Genetic Counselors (ABGC)

Psychotherapy Supervisor Developmental Scale (PSDS)

Professional Status Survey (PSS)

Supervisor Complexity Model (SCM)

Approved Clinical Supervisor (ACS)

Continuing Education Credits (CEU's)

Analysis of Variance (ANOVA)

Association for Marriage and Family Therapy (AAMFT)

Introduction

According to the American Board of Genetic Counseling (ABGC), an entry-level genetic counselor must demonstrate specific practice-based competencies in order to successfully manage a genetic counseling case before, during, and after a clinic visit or session (American Board of Genetic Counseling, 2010). An essential method for ensuring genetic counseling students meet these practice-based competencies is through clinical supervision by a genetic counselor (Hendrickson, Veach, & LeRoy, 2002; Lindh, Veach, Cikanek, & LeRoy, 2003; Uhlmann, Schuette, & Yashar, 2009; Weil, 2000). Supervision of genetic counseling students typically occurs prior to, during, and after a genetic counseling session (Hendrickson, et al., 2002; Uhlmann, et al., 2009). Clinical supervisors serve as mentors to students during their clinical rotations by overseeing student case preparation, evaluating student performance, and providing feedback to the students concerning their professional development (Lindh, et al., 2003; Uhlmann, et al., 2009). Therefore, clinical supervisors have a unique opportunity to influence a student's method and style of counseling (Middleton et al., 2007).

Clinical supervision not only promotes professional development and competency in students as future genetic counselors by allowing them to assess their professional strengths and limitations through experience and feedback, it improves quality patient services (Hendrickson, et al., 2002; Lindh, et al., 2003; Middleton, et al., 2007; Uhlmann, et al., 2009). Therefore, clinical supervision is not only important for students, but is important for those receiving genetic counseling services as they may benefit from care supervised by more competent genetic counselors. Because the supervision relationship is an important, dynamic component that affects students, supervisors, and clients, supervisors should be competent in both clinical supervision of students and the field of genetic counseling (Hendrickson, et al., 2002).

The genetic counselor's own training and experience, or lack thereof, may affect the genetic counseling student's method and style of counseling when the student becomes a professional (Middleton, et al., 2007). McIntosh, et al., (2006) discussed that lack of supervision training may create insecurity and anxiety surrounding the supervision of students. This in turn may cause the genetic counseling supervisor to play games such as creating ways to increase power and authority that may overshadow students realization of their clinical goals and ultimately affect patient care. Currently there are no guidelines on supervision competencies for genetic counselors that supervise genetic counseling students in a clinical setting.

Few studies have investigated how genetic counselors learn to supervise students, what training in supervision is currently available, and if training in supervision influences their confidence and competence in supervising students in a clinical setting (Hendrickson, et al., 2002; Lee, Veach, & Leroy, 2009; Lindh, et al., 2003). It is the counseling role of genetic counselors that set them apart from other medical professionals such as geneticists, obstetricians, and oncologists and put them in a similar role to other mental health professions that provide clinical counseling (L. D. Borders, Eubanks, & Callanan, 2006; Kennedy, 2000). There is vast literature on the need and creation of supervision training programs for clinical professionals who supervise students in the field of psychology (Robiner & Schofield, 1990). Further, there are required supervision training programs for other related professions such as psychotherapy, marriage and family therapy, and social work (American Association for Marriage and Family Therapy, 2007; American Psychological Association, 2009; Coleman, 2003).

The most extensive set of recommendations for supervisor training in other professions has come from the Association for Counselor Education and Supervision (L. D. Borders, et al., 2006). For counseling practitioners, a minimum of 100 hours of supervisory experience is

required to earn the Approved Clinical Supervisor (ACS) credential (Bernard & Goodyear, 2004). A supervisor in training is then required to complete a total of twenty hours of being supervised themselves to qualify for the ACS credential. Further, continued supervision for counseling professionals is recommended throughout the counseling practitioner's careers (Pelling, 2008; Watkins, Schneider, Haynes, & Nieberding, 1995). The ACS also requires that a certified supervisor has 1,500 hours of direct service to clients with more than five years of professional counseling experience with the idea that a competent supervisor should also be a competent counselor (Bernard & Goodyear, 2004).

In order to investigate which factors increase a supervisor's competence in their role as a supervisor, Watkins developed and validated a theory driven scale that attempts to measure supervisory identity development called the Psychotherapy Supervisory Development Scale (PSDS). Supervisor development refers to "the stages of growth through which supervisors pass on their way to actually becoming a supervisor" (Watkins, et al., 1995, p.78). Supervisory identity development can be defined as the extent to which as supervisor is both confident and competent in their current supervisory skills and professional identity, has consistent awareness of supervisory strengths and weaknesses, and provides a well-integrated and consistent supervisory style (Watkins, 1993; Watkins, et al., 1995). Previous studies in the field of psychology that have used the PSDS, found that supervisory identity development was influenced by supervisory experience, counseling experience, and supervision training (Bernard & Goodyear, 2004; Pelling, 2008). In genetic counseling literature, PSDS scores were significantly correlated with supervision experience, age, and clinical experience, but supervision training was not a factor in this analysis (Lee, et al., 2009) .

Purpose of the Present Study

The future of genetic counseling is influenced by how well individuals are trained to become both competent genetic counselors and effective supervisors. If the goal of supervision is to ultimately educate students to be effective future genetic counselors, then supervisors should be educated to be effective clinical supervisors. Other counseling fields have recognized supervision as a profession in its own right including its own separate body of knowledge and skills (Scott, Ingram, Vitanza, & Smith, 2000). Therefore, it can be said that an effective genetic counselor does not necessarily make one an effective genetic counseling supervisor (Uhlmann, et al., 2009). The current study aimed to investigate how clinical experience, supervisory experience, and supervision training relate to supervisory identity development in the field of genetic counseling. In addition, this study explores the perspective of genetic counselors on supervision training needs and requirements in the field.

Methods

Participants

Upon receipt of approval from Cincinnati Children's Hospital Medical Center and University of Cincinnati's Institutional Review Board in Summer 2011, participants were recruited through a post to a general listserv and a discussion forum post of the National Society of Genetic Counselors (NSGC) from September 7, 2011 to October 17, 2011. All full and new members of the NSGC who were enrolled in the general listserv or who had opted in to the discussion forum posts received an email inviting their participation in an anonymous survey. According to NSGC's Professional Status Survey (PSS) from 2010, there are an estimated 2,316 full members of the NSGC and 362 new members equaling a total of 2,678 possible subjects. The invitation provided a link to an online survey, which included the Psychotherapy Supervisory Developmental Scale (PSDS) and study specific questions regarding clinical

experience, supervision experience of genetic counseling students in a clinical setting, supervision training, and demographics.

Instrumentation

Psychotherapy Supervisory Developmental Scale (PSDS)

The Psychotherapy Supervisory Developmental Scale (PSDS) (Watkins et al. 1995) was used in the present study to assess how genetic counselors feel about their development as a clinical supervisor. The PSDS is a theory driven scale developed from a well-researched model called the Supervisory Complexity Model (SCM) by Watkins (1990) in which both skills and supervisory identity are developed as a professional moves through four separate stages: role shock, role recovery and transition, role consolidation, and role mastery. At each stage the supervisor is said to develop greater professional identity, increased acceptance of the supervisee, decreased anxiety, and increased confidence in supervisory skills (Baker, Exum, & Tyler, 2002; Lee, et al., 2009; Pelling, 2008; Watkins, 1993; Watkins, et al., 1995) The PSDS contains 18 items specifically assessing perceived competence, supervisor's level of identity and commitment to being a supervisor, supervisor's awareness of his or her impact as a supervisor, and the supervisor's perceptions of him or herself in the supervisory role based on a Likert scale (1 = never; 4 = half the time, 7 = always). The PSDS provides one total score which reflects supervisor's perceived level of development (Watkins, et al., 1995). The scores can range from 18 to 126 with higher scores indicating higher levels of supervisory identity development. Validity of the PSDS was established by Watkins et al., (1995) and further by Hillman et al., (1998) who found that as supervisor experience increased, PSDS scores increased. Internal

consistency and reliability is high with an alpha coefficient from two different studies of 0.90 (Watkins et al. 1995), and 0.95 (Hillman et al. 1998).

Questionnaire

The questionnaire was designed to investigate professional experience and level of field involvement, so that variables previously found in the literature to be attributed to supervisory identity development could be assessed. All participants were asked questions about demographics, clinical experience, supervision training methods, and perception of supervision training needs and requirements in the field. Additionally those who indicated that they have supervised genetic counseling students were asked about supervision experience and completed the PSDS. Demographic information included gender, age, race, highest educational degree earned, and certification status as a genetic counselor.

In the present study, supervision training methods were divided into "informal training" and "formal training". Formal training was defined as an "in person" supervision course, online course, or workshop/seminar. Informal training was defined as learning from trial and error, student feedback, consulting with colleagues, following own supervisor's methods, and reading relevant literature. Respondents were also asked if they received supervision training during and/or after graduate school and if the training was for continuing education credits (CEU's) and/or credit hours. Clinical experience was assessed by determining total years of experience practicing genetic counseling in a clinical setting and supervision experience was assessed by determining total years of experience supervising genetic counseling students in a clinical setting. Three genetics professionals with genetic counseling student supervision experience reviewed all sections of the questionnaire and the questionnaire was edited based upon feedback.

Analysis

The data analysis was performed using the SPSS® version 20.0 statistical software system. Using one-way analysis of variance (ANOVA), the analysis compared differences between group means to identify which factors had a greater impact on PSDS score. An alpha level of 0.05 was used for all analyses. Post hoc analyses were examined for each statistically significant result in order to specify which groups experienced significant differences. A two-way analysis of variance was conducted to determine if the effect of each variable on PSDS score still existed when accounting for all variables shown to have an impact on PSDS score. Descriptive statistics were calculated for the respondent's demographics and for selected variables including clinical experience and supervision experience. Chi squared analyses and *t* tests were conducted to examine demographic differences between supervisors and non-supervisors and for the selected descriptive variables to assess if there were statistically significant relationships between these variables.

Results

Demographics

Of the 306 survey respondents, 277 finished the online survey and were included in the final analysis. The demographics for respondents who provided supervision to genetic counseling students ($n = 210$) were compared to those who had never provided supervision to genetic counseling students ($n = 67$) (Table I). Those respondents who have supervised students were more likely to be certified as a genetic counselor ($p < 0.001$) with a greater number of years' experience as a genetic counselor in a clinical setting ($p < 0.001$). No statistically significant differences were obtained for gender, ethnicity, age, education level, or primary clinical specialty.

A majority of the respondents were female, in the age range of 25-39 years and were mostly of Caucasian/white non-Hispanic background. Almost all respondents indicated their highest degree was MA, MS, or SCM with very few indicating having a PhD. Most participants were employed in a University Medical Center (65.9%) or a private hospital or facility (28.9%) and indicated their primary clinical specialty areas to be prenatal, cancer, and pediatrics. A majority of respondents reported less than ten years of experience practicing genetic counseling in a clinical setting. Most respondents indicated having less than five years of experience supervising students in a clinical setting, supervise 1-3 genetic counseling students per year, and spend less than 10% of their job dedicated to teaching, educating, or supervising students (Table II).

Supervision Training Experience

Of the 277 respondents, both those who have supervised students and those who have not supervised students, 39.7% reported having informal methods of training only, 45.1% reported having one method of formal training, and 15.2% respondents reported having two or more methods of formal training. Workshops or seminars were reported as the most frequent source of formal training received (Table III) and respondents indicated that most of their formal training occurred post graduate school and was for continuing education units. The most prevalent informal methods of training by which respondents learned how to supervise students were consulting with colleagues, trial and error, student feedback, and either following (or not following) their past supervisors' methods.

Impact of Experience and Training on Supervisory Identity

Only participants who reported they had provided clinical supervision to students completed the PSDS (n = 210). The mean PSDS score in this sample population was 100.2 (Range = 63-126; SD = 11.81). All participants reported they had used at least used one source of informal training. Therefore an initial one-way ANOVA examined if there were differences in mean PSDS score between respondents who had informal training only versus those who had formal training. The results showed differences in PSDS score between those with formal training experience versus those with informal training only, (F [2,201] = 5.058, p = 0.006). Tukey's post hoc analyses were done to investigate where the actual significant difference lied between those respondents who had informal training only and those respondents with some method of formal training. There was a significant difference between those respondents who indicated having two or more methods of formal training versus those who had informal training only (M = 7.97, SD = 2.54, p = 0.003) (Table IV). There were no differences between those with informal training only and those who had taken only one method of formal training.

A one-way ANOVA showed significant differences in mean PSDS score based on years of experience practicing genetic counseling in a clinical setting (F [6, 202] = 2.963, p = 0.009). Tukey's post hoc analysis revealed significant differences between those genetic counselors who had less than ten years of experience practicing genetic counseling in a clinical setting and those with 20-25 years of experience (M = 10.80, SD = 2.98, p = 0.003) (Table V).

A one-way ANOVA showed significant differences in mean PSDS score based on years of experience supervising students in a clinical setting (F [5, 200] = 3.96, p = 0.002). Tukey's post hoc analysis revealed the significant differences in PSDS score lied between genetic counselors with less than five year experience supervising students and those with 5-9 years of

experience (M = 5.53, SD = 1.91, p = 0.048), and less than 5 years of experience and greater than fifteen years of supervision experience (M = 14.74, SD = 4.45, p = 0.014) (Table VI).

A two-way analysis was also performed to look at interaction between training and supervision experience, training and clinical experience, and supervision and clinical experience separately and then all three variables together. All analysis showed that when including interaction of these variables, the mean difference in PSDS score was no longer significant. Given the interaction effects, further analysis was done to explore the impact of training on supervision identity development at different levels of supervision experience. A one-way ANOVA was performed to investigate whether or not formal training impacted PSDS score for those with less than ten years of supervision experience. The analysis showed that there was a significant difference in mean PSDS score between respondents with informal training only versus respondents with formal training (F [2,167] = 3.13, p = 0.46). Tukey's post hoc revealed the significant differences were between those with 2 or more formal training methods vs. those with informal training only (M = 7.28, SD = 2.95, p = 0.039) (Table VII). When looking at those with greater than ten years of experience supervising genetic counseling students in a clinical setting, there was no difference in PSDS score with formal vs. informal training (p = 0.368).

Supervision Training Needs and Requirements

Participants indicated the main reason for not obtaining supervision training was that the opportunity was not available (Table VIII). Respondents also indicated through an open-ended question other barriers including: "no formal guidance on what genetic counseling supervision training programs are expected to provide", and they were concerned about the "quality training of such a program if it were to be offered". Cost of training was also a barrier reported by multiple respondents including that "it would not be funded by [their] institution". Some

respondents even indicated that they were not aware training for supervision existed. The opinions of genetic counselors that participated in this study on requirements for supervisors and ideal timing of supervision training is outlined in (Table IX).

Discussion

The purpose of this study was to investigate the impact of clinical and supervision experience as well as different methods of supervision training on genetic counselors' supervisory identity development as measured by the Psychotherapy Supervisory Developmental Scale (PSDS). Our overall finding is that supervision training, clinical experience, and supervision experience all impact genetic counselors perceived level of supervisory identity development. Therefore, the more experience a genetic counselors has in these areas, the more developed they perceive themselves to be as a supervisor. This is similar to previous findings in psychology where supervision experience had the greatest influence on PSDS score followed by clinical experience and supervision training (Pelling, 2008). A previous study by Lee et al., (2009) also found clinical and supervision experience to have a significant impact on PSDS score, but supervision training was not included in this study.

In the present study, genetic counselors that have supervised students in a clinical setting perceived themselves as moderately developed supervisors (M=100.2; SD = 11.81). This score is similar to previous reports in genetic counseling literature (Lee, et al., 2009) (M = 101.92; SD = 10.82) and in mental health literature (Hillman, McPherson, Swank, & Watkins, 1998) (M = 103.95, SD = 11.24; M = 104.3, SD = 10.4). While our study showed that more clinical and supervision experience leads to greater supervisory identity development, most genetic counselors report fewer than five years of experience supervising students and less than ten years of experience as a genetic counselor.

This study investigated both formal and informal methods of supervision training. The most frequent informal methods of training utilized included trial and error, student feedback, and consulting with colleagues. This finding is similar to previous studies in the genetic counseling literature that investigated informal methods of training (Hendrickson, et al., 2002; Lindh, et al., 2003). The most common formal method reported was either a workshop or seminar, and much less common was a formal (live in person) or online course. The content of these formal methods of training was not evaluated. This is the first study in the genetic counseling literature documenting formal methods of training by which genetic counselors learn how to supervise students.

In supervision training, the genetic counseling supervisors who have taken two or more methods of formal training courses perceived themselves as more competent and confident in their role as a supervisor than those who have only utilized informal methods of supervision training. This suggests that increased training in supervision may increase supervisory competence and confidence and therefore could contribute to the improvement of live supervision offered to genetic counseling students. However, this effect was confounded by other variables that have been shown to increase supervisory identity development, such as supervision experience and clinical experience.

Supervisors with more years of experience supervising students in a clinical setting and those with more clinical experience felt more competent and confident in their role as a supervisor. When accounting for supervision experience, clinical experience, and training experience, the interactions on PSDS score were no longer significant. This could either indicate that individuals have had more opportunity to receive formal training with greater years of experience in the genetic counseling field, those who have more experience recognize more

readily the need for formal training in supervision, or that supervision experience and clinical experience have a similar impact as supervision training on PSDS score.

Despite the interactions between supervision experience, counseling experience, and formal training experience, it is important to note that formal supervision training was shown to significantly increase supervisory identity development in those genetic counselors with less than ten years of experience providing clinical supervision to students. Formal training was not shown to have an impact on genetic counselors with greater than ten years of experience supervising. This may indicate that focusing supervision training on those with less supervision experience will be the most beneficial.

A second aim of this study was to explore genetic counselors' perceptions of supervision training needs. Similar to previous genetic counseling studies, supervisors indicated barriers to participating in training including time, money, and lack of supervision courses available (Lindh, et al., 2003). If supervision training is not recognized as important for the development of supervisors, institutions may not be offering or supporting genetic counselors financially for these programs. Most participants indicated that they would be interested in training courses. A few of the respondents correctly pointed out that there is no formal guidance on what supervision training should provide in terms of content and were therefore concerned about the quality of training courses. There are currently no guidelines for supervision or for supervision training course content. Development of such guidelines would be key in addressing the interest in training that participants expressed in the present study as well as maximizing the benefit of this training for novice supervisors.

Most genetic counselors in this study indicated supervision training should be offered after graduate school, as a professional, before supervising students. However, the main barriers

to receiving training for supervision reported in this study were time and money that were not provided by the institution they were working for. Therefore, taking a course during graduate school could solve some of the barriers provided by genetic counselors in this study and others for taking part in a training course. However, supervision is not included in the American Board of Genetic Counseling (ABGC) practice based competencies in which genetic counseling graduate programs curriculum is guided (American Board of Genetic Counseling, 2010). Therefore, supervision may not be seen as an essential or necessary component in coursework by graduate programs. Typically, in other mental health related programs such as social work or counseling, there are clearly stated competencies tied to supervision skills (Leslie DiAnne Borders & Brown, 2005).

Lastly we explored genetic counselors' perception of potential guidelines or requirements for clinical supervisors. The findings in the current study suggest that genetic counselors believe there should be guidelines to becoming a supervisor. Some suggestions include requiring a certain number of years of experience as a genetic counselor, certification as a genetic counselor, and supervision training either during or after graduate school. Interestingly, while supervision is currently included in the content outline on which the genetic counseling board exam is based, most respondents did not think this should be a component of the exam (Practice Based Competencies, Accessed 2012).

Other professions that train students through supervision, including psychotherapy, social work, and marriage and family therapy, have recognized the need for those who supervise students in a clinical setting to demonstrate supervision knowledge and competency prior to providing these supervision services. These counseling professions require a certain number of years post-master's degree experience in their professional field, licensure or certification, and

completion of a formal supervision training course (American Association for Marriage and Family Therapy, 2007; American Psychological Association, 2009; Leslie DiAnne Borders & Brown, 2005). A family or marriage therapist in training must further be mentored and supervised themselves by an American Association for Marriage and Family Therapy (AAMFT) approved supervisor (American Association for Marriage and Family Therapy, 2007). Beyond the national guidelines, some states require even more specific guidelines for those who supervise students in a clinical setting.

While respondents to this study do seem to favor creation of training or experience requirements for supervisors, one of the major limitations for the number of students allowed in a genetic counseling program is the number of genetic counselors available to supervise these students. It should also be recognized that genetic counseling is still a relatively new field and therefore a limited number of senior genetic counselors are available to supervise students. Therefore, limiting the number of genetic counselors who can supervise to those who meet specific standards might present challenges with identifying the appropriate amount of supervisors in the same geographical area as the genetic counseling program. Hopefully as the field matures, these limitations will no longer exist.

The current study does have some limitations. The sample's demographics appear to be similar to those of other NSGC members as outlined in the Professional Status Survey (PSS) (2010). However, it is unknown whether they differ in significant ways from those who did not respond. The present findings therefore could be validated in further studies with larger samples. Also, none of the respondents indicated receiving *no* supervision training. Therefore, the population of genetic counselors in this study may have been more interested in supervision training and may not be representative of the entire population.

Another limitation of this study is that the PSDS doesn't measure ability but measures perception. Scores on the PSDS were based on how the counselor viewed him or herself in their role as a professional and may not be an accurate reflection of their skill as a supervisor. However, understanding how an individual perceives him or herself as a supervisor is important in understanding their comfort and commitment to this role.

In order to address possible misperceptions of supervisors themselves, previous studies have looked at student perceptions of genetic counseling supervisors. Future studies could therefore focus on how students perceive novice supervisors versus how they perceive well established supervisors based on what kind of feedback they are given, their roles in clinic, and how they learn. The present study also indicated genetic counselors feel there is no formal guidance on what supervision training is supposed to provide in terms of content and were therefore concerned about the quality of training courses. Further studies could be useful to identify what course content is currently being taught in supervision training programs for genetic counselors and whether or not the content increases supervision skills and/or supervisory identity development. If genetic counselors were taking time and money to pay for supervision courses themselves, it would be important to investigate if counselors find these courses beneficial for their professional development.

In summary, the more experience a genetic counseling supervisors has, whether it be in supervision training, clinical experience, or supervision experience, the more developed they are as supervisors. The current study indicated that most supervisors currently have limited clinical and supervision experience. We recommend that this group of supervisors who are early in their professional careers receive formal supervision training when this training is likely to have the largest impact. The findings also suggest that genetic counselors are interested in receiving

training but are hindered by many barriers such as lack of training available, time, and money. Most genetic counselors in this study also feel there should be guidelines for those who supervise students in our profession. Increased supervisor identity and competency of genetic counselors that supervise will not only benefit students who learn through supervision, but will also promote quality patient care. Therefore, more research needs to be done on supervision training for supervisors in the genetic counseling field.

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Table I. Demographics

Characteristics	Supervisors (N = 210)	Nonsupervisors (N = 67)	Total respondents (N = 277)
Sex	*n = 209*	*n = 67*	*n = 276*
Male	2.4 (5)	6.0 (4)	3.3 (9)
Female	97.6 (204)	94.0 (63)	96.7 (267)
Age	*n = 209*	*n = 67*	*n = 276*
<25 years	0 (0)	11.9 (8)	2.9 (2)
25-39 years	73.7 (154)	79.1 (53)	75.0 (207)
≥40 years	26.3 (55)	9.0 (6)	22.1 (67)
Race	*n = 207*	*n = 67*	*n = 274*
Caucasian/White Non-Hispanic	94.2 (195)	94.0 (63)	94.2 (258)
Caucasian/White Hispanic	1.4 (3)	0.0 (0)	1.1 (3)
African American/Black	0.5 (1)	1.5 (1)	0.7 (2)
Asian/Pacific Islander	2.9 (6)	4.5 (3)	3.3 (9)
Biracial/Multiracial	1.0 (2)	0.0 (0)	0.7 (2)
Years of experience practicing genetic counseling in a clinical setting	n = 209	*n = 67*	*n = 276*
<1 year	2.4 (5)	37.3 (25)	10.9 (30)
1-4 years	30.6 (64)	49.3 (33)	35.1 (97)
5-9 years	28.7 (60)	9.0 (6)	23.9 (66)
10-14 years	18.7 (3.9)	3.0 (2)	14.9 (41)
15-19 years	4.7 (13)	1.5 (1)	5.0 (14)
20-25	6.2 (17)	0 (0)	6.1 (17)
≥25 years	4.3 (12)	0 (0)	4.3 (12)
Highest educational degree	*n = 210*	*n = 67*	*n = 277*
MA or MS or SCM	99.0 (208)	98.5 (66)	98.9 (274)
PhD	1.0 (2)	1.5 (1)	1.1 (3)
Cerfied genetic counselor (CGC)	*n = 209*	*n = 67*	*n = 276*
Yes	92.8 (194)	55.2 (37)	83.7 (231)
No	7.2 (15)	44.8 (30)	16.3 (45)
Supervised in clinic as a student	*n = 208*	*n = 67*	*n = 275*
Yes	98.6 (205)	100.0 (67)	98.9 (272)
No	1.4 (3)	0.0 (0)	1.1 (3)
Primary Clinical Specialty	*n = 195*	*n = 53*	*n = 248*
Prenatal	34.9 (68)	28.3 (15)	33.5 (83)
Cancer	24.6 (48)	39.6 (21)	27.8 (69)
Pediatrics	26.2 (51)	13.2 (7)	23.4 (58)
Cardiology	3.1 (6)	0.0 (0)	2.4 (6)
Neurogenetics	3.1 (6)	5.7 (3)	3.6 (9)
Adult (including complex disease)	1.5 (3)	7.5 (4)	2.8 (7)
Other	12.9 (25)	11.4 (6)	12.4 (31)

Respondents did not have to answer all questions. Therefore the total number of respondents for each question are provided. "Other" for primary specialty includes: PGD/Preconception, Infertility, ART/IVS, Screening (Multiple Marker), Metabolic Disease, Hematology, and Fetal diagnosis/testing

Table II. Current Involvement in Supervision

Question	% (n)
Hours per week spent providing supervision (including before, during, after) (*n* = 207)	
<1	4.8 (10)
1-3	24.6 (51)
4-6	26.6 (55)
7-9	18.4 (38)
10-12	14.0 (29)
≥13	11.6 (24)
Number of GC students supervised at one time (*n* = 209)	
1	89.5 (187)
2	9.1 (19)
≥3	1.5 (3)
Number of GC students supervised per year (*n* = 207)	
1-3	65.2 (135)
4-6	27.1 (56)
7-9	3.9 (8)
≥10	3.9 (8)
Total years supervising GC students in a clinical setting (*n* = 207)	
<1	12.6 (26)
1-4	42.5 (88)
5-9	25.1 (52)
10-14	12.2 (25
15-19	3.4 (7)
20-25	2.9 (6)
>25	1.4 (3)
Percent of current job dedicated to teaching/educating/supervising students (*n* = 208)	
0%	14.9 (31)
1-10%	61.5 (128)
11-20%	17.3 (36)
>20%	6.3 (13)
Primary are of practice in which clinical supervision of GC students is provided (*n* = 196)	
Prenatal/Screening (Multiple Marker)	30.1 (59)
Pediatrics	29.6 (58)
Cancer	20.9 (41)
Fetal diagnosis/testing	7.7 (15)
Cardiology	3.1 (6)
Adult	2.6 (5)
Metabolic disease	2.6 (5)
Other	3.6 (7)

Only those respondents who have supervised students in a clinical setting responded to these questions.

Table III. Methods of Supervision Training

Method	% (n)
Formal (*n* = 277)	
Workshop/Seminar	45.1 (125)
Supervision course (in person)	16.7 (46)
Online supervision course	2.2 (6)
Informal (*n* = 273)	
Consult with colleagues	80.2% (219)
Student feedback	74.4% (203)
Trial and error	73.3% (200)
Following own supervisors methods	65.6% (179)
Reading relevant literature	46.9% (138)
Peer group supervision	22.7% (62)
None of the above	11% (30)
Other (11)	

All participants, both those who have supervised and those who have not supervised students in a clinical setting answered this question. Participants could select more than one of the following.

Table IV. Supervision training and PSDS score (*N* = 204)

	n	Mean	SD
0	81	96.90	12.47
1	92	99.99	12.36
≥2	31	104.87	9.57
Total	204	99.50	12.27

0 = informal training only, 1 = formal training with any combination of informal training, ≥2 = 2 or more formal training with any combination of informal

Table V. Years of experience practicing genetic counseling in a clinical setting

Numbers of Years	*N* = 209	Mean PSDS score	SD
<10	128	98.32	12.25
10-14	39	102.51	11.20
15-19	12	99.50	6.96
20-25	17	109.12	9.94
>25	12	101.17	9.96

Table VI. Years of experience supervising students in a clinical setting

Number of Years	*N = 207*	Mean PSDS score	SD
<5	114	97.26	12.00
5-9	52	102.79	10.26
10-14	25	102.92	10.98
≥15	16	107.06	11.45

Table VII. Supervision Training and PSDS score in GC's with less than 10 years of experience (N = 170)

Number of Years	*n*	Mean	SD
0	78	97.04	11.79
1	73	99.21	11.77
≥2	19	104.32	9.12

This data represents only those respondents with less than 10 years of experience supervising students. 0 = informal training only, 1 = formal training with any combination of informal training, ≥2 = 2 or more formal training with any combination of informal.

Table VIII. Perceived barriers to supervision training

Feedback	n = 266 % (n)
Opportunity not available	74.1 (197)
Lack of time	48.9 (130)
Scheduling difficulties	39.5 (105)
Wasn't supervising students at time training was offered	14.3 (38)
Not interested	4.9 (13)
Cost	3.3 (9)
Concerned about quality of training	1.1 (3)
Didn't know training existed	0.8 (2)
Other (8)	

Participants could select more than one of the following choices.

Table IX. Training Needs

Think Supervision should (be):	N = 276 % (*n*)
Practice based competency	29.3 (81)
Training requirement during graduate school	19.6 (54)
Training requirement after graduate school	38.0 (105)
Evaluated on board examinations	5.8 (16)
Require defined number years of experience as a GC	36.2 (100)
Require certification as a genetic counselor (CGC)	67.4 (186)
Require licensure (if applicable)	27.9 (77)
Require supervision (peer supervision)	17.8 (49)
Require observation of clinical supervision sessions	22.1 (61)
None of the Above	8.0 (22)

Respondents could choose >1 answer for each of the following questions.

APPENDIX A

Supervision Training Questionnaire & PSDS

Version 1 – 2011

Section I: Current Involvement in Supervision

1. Did you graduate from an ABGC accredited Genetic Counseling Program?
    a. Yes
    b. No
2. Have you ever provided supervision to a genetic counseling student in a clinical setting?
    a) Yes (Answer 3a)
    b) No (Answer 3b)

3a. What are/were your reason(s) for providing clinical supervision? (Check all that apply)

- a) Enjoy supervising
- b) Desire to give back to the profession
- c) Promotes professional development
- d) Helps one keep current with literature
- e) Required/part of job description
- f) Salary benefits
- g) Other?_____ (with option to put in other reason)

3b. What are your reason(s) for NOT providing clinical supervision (Check all that apply)?

- a) No local program
- b) Never Asked
- c) Have not worked in a clinical setting
- d) Recently graduated
- e) Not enough students
- f) Not interested

g) Don't feel competent as a supervisor

h) I am not comfortable in my role as a GC yet

i) Other?____(with option to put in other reason)

SKIP TO Q13

4. Do you currently supervise genetic counseling students?

a) Yes *(continue with version 1)*

b) No *(skip to version 2)**

**Version 2 through skip logic on SurveyMonkey®. Those who answer b to question 4 will go straight to question*

5. How many hours per week do you spend providing supervision to students (including before, during, and after a genetic counseling clinical visit)?

a) < 1 hour

b) 1-3 hours

c) 4-6 hours

d) 7-9 hours

e) 10-12 hours

f) ≥13 hours

6. How many genetic counseling students do you typically supervise at one time?

a) 1

b) 2

c) 3

d) 4

e) 5

f) 6 or more

7. How many genetic counseling students do you supervise per year (on average) in a clinical setting?

a) 1-3

b) 4-6

c) 7-9

d) ≥10

8. How many years total have you supervised genetic counseling students in a clinical setting?

    a. <1

    b. 1-4

    c. 5-9

    d. 10-14

    e. 15-19

    f. 20-25

    g. >25

9. What type(s) of supervision do you routinely provide to students in a clinical setting?(check all that apply)

    a) In person supervision in a clinical setting

    b) Audio/Video recording

    c) Role-play

    d) Written Supervisee feedback

    e) Verbal Supervisee feedback before a case

    f) Verbal Supervisee feedback after a case

10. What percentage of your job is dedicated to teaching/educating/supervising students?

    a)<10%

    b) 10-20%

    c) 21-30%

    d) 31-40%

    e) 41-50%

    f) 51-60%

    g) 61-60%

    h) >60%

11. What is the primary area of practice in which you provide clinical supervision (check one)

    a) Prenatal/Screening (Multipile Marker)

    b) Cancer Genetics

    c) Pediatrics

    d) Adult (including complex disease)

    e) PGD/Preconception

    f) Infertility, ART/IVS

    g) Teratogens

    h) Cardiology

    i) Metabolic Disease

    j) Hematology

    k) Neurogenetics

    l) Fetal diagnosis/testing

    m) Other specialty disease _____(with box for them to comment what the other is).

12. What is your primary work/supervision setting?

    a) University medical center

    b) Private hospital or facility

    c) Individual private practice

    d) Health maintenance organization

    e) Federal, state, or county office

    f) Diagnostic laboratory

    g) Group private practice

    h) Other: (With option to write in box)

Section II: Training Received

13. Check all of the following methods of supervision training in which you learned how to supervise genetic counseling students. With each answer, check yes or no if you have/have not received each method of training, how many hours or credit hours the training was, and whether the method(s) of training selected were for Continuing Education Credits (CEU's).

Method of Training	Yes/No	Hours/Mo	Credit Hours (equivalent to semesters)	Pre/Post Grad or Both?	Continuing Education Credits?
Supervision Course (In person)	Yes No	N/A	1 2 3 4 5	Pre Graduate Post Graduate Both Pre/Post	Yes No
Workshop/Seminar	Yes No	<1 1.5-3 4-6 7-10 10-13 >13.5	N/A	Pre Graduate Post Graduate Both Pre/Post	Yes No
Online supervision course	Yes No	<1 1.5-3 4-6 7-10 10-13 >13.5	1 2 3 4 5	Pre Graduate Post Graduate Both Pre/Post	Yes No

14. Check all of the following methods of supervision training in which you learned how to supervise genetic counseling students. With each answer, check yes or no if you have/have not received each method of training.

Method of Training	Yes/No
Trial and Error	Yes No
Student Feedback	Yes No
Consult with colleagues	Yes No
Reading relevant literature	Yes No
Following own supervisors methods	Yes No
Peer group supervision	Yes No

Other cell with option to fill in other method of training received for supervision. If answered, please fill in how many hours, credit hours, or if CEU's were awarded.

Section III: Psychotherapy Supervisor Development Scale

Answers to the following questions will be as follows using a 7-point scale, where

1= *Never*

2= Almost Never

3= Occasionally

4= Half the Time

5= Most of the Time

6= Almost Always

7= Always

15. I consider the supervision that I provide to be helpful to my supervisees.

16. I believe I am able to increasingly foster a sense of self-sufficiency in my supervisees.

17. I believe I am generally effective in dealing with transference/countertransference issues in supervision.

18. As a supervisor, I structure the supervision experience effectively.

19. When needed, I am able to be appropriately assertive and confrontive with my supervisees.

20. Becoming and being a supervisor demands a commitment (i.e., to keep working at developing oneself as supervisor) that I believe I have made.

21. I consider supervision to be a very important role that I perform.

22. I believe I have a good awareness about myself as a supervisor, the impact that I have on supervisees, and how I affect the supervisory situation as a whole.

23. Becoming a supervisor is an ongoing process that requires much time and energy, but I see myself as well on my way to getting there.

24. If asked, “Do you really feel like a Genetic Counseling supervisor”, I could honestly answer yes.

25. If asked, “Can you give a good assessment of yourself as a supervisor?”, I could easily answer “yes”.

26. I believe I have a good knowledge of and understanding about the supervision process itself.

27. I just don't consider myself that identified with the supervisor role.

28. I have a realistic awareness about my strengths and abilities as a supervisor.

29. I believe I have a good awareness about myself as a supervisor, the impact that I have on supervisees, and how I affect the supervisory situation as a whole.

30. Sometimes I believe I'm just playing at being a supervisor.

31. Right now, I feel ill-at-ease and somewhat confused with the supervisor role.

32. If asked, "Do you really feel like a genetic counseling supervisor" I could honestly answer "yes."

33. I must say that, when I perform my supervisory responsibilities, I often think of myself as an imposter.

Section IV: Training Needs

34. Which of the following do you perceive as barriers to obtaining supervision training (check all that apply)?

    a) Opportunity not available

    b) Wasn't supervising students at the time supervision was offered

    c) Scheduling difficulties

    d) Lack of time

    e) Not interested

    f) Other?_____ (With option to write in box)

35. Which of the following do you feel would be useful in developing supervision skills? (check all that apply)?

    a) Informal training (workshop/seminar)

    b) Formal training (class, course)

    c) CEU's (i.e, for attendance at clinical supervision training)

    d) At least one year of experience as a genetic counselor

    e) Certification or licensure (if applicable) as a Genetic Counselor (CGC)

    f) Supervision for a specified period of time as a supervisor (peer supervision)

    g) Observation of a certain number of clinical supervision sessions

    h) No defined years of experience

    i) Other _____

36. Do you think supervision should be (check all that apply)?

    a) A practice based competency

    b) Training requirement during graduate school

    c) Training requirement after graduate school

    d) Evaluated on board examination

    e) None of the above

37. Are you interested in receiving supervision training?

    a) Yes (Continue to Question 36)

    b) No (skip to Question 38)

38. In your opinion, when would be the ideal time to receive supervision training?

    a) As a student/during graduate training

    b) As a professional before supervising students

    c) As a professional while supervising students

    d) After certification as a Genetic Counselor

    e) Before certification as a Genetic Counselor

39. What content would you like to learn more about regarding student supervision (check all that apply)?

a) Models of supervision

b) Supervision methods and techniques

c) Ethical, legal, and professional regulatory issues

d) Evaluation of students

e) Managing supervisory relationships and boundaries

f) Promoting professional development

g) Dealing with challenging student situations

h) Other _____

Demographics (Section V)

40. Gender

a) Male

b) Female

41. Age in years

a) 20-24?

b) 25-29

c) 30-34

d) 35-39

e) 40-44

f) 45-49

g) 50-54

h) 55-59

i) 60-64

j) 65-69

k) 70-74

l) >75

42. What is your ethnicity/race?

    a) Caucasian/White

    b) African American/Black

    c) Asian/Pacific Islander

    d) Biracial/Multiracial

    e) Hispanic/Latino

    f) Other

43. How many years of experience do you have practicing genetic counseling in a clinical setting?

    a) <1

    b) 1-4

    c) 5-9

    d) 10-14

    e) 15-19

    f) 20-25

    g) >25

44. What is your highest educational degree?

    a) MA or MS

    b) PhD

    c) MD

    d) BSN/RN

    e) Other

45. Were you supervised as a student?

    1) Yes

    2) No

46. What is your primary clinical specialty?

    a) Prenatal

b) Cancer Genetics

c) Pediatrics

d) Adult (including complex disease)

e) PGD/Preconception

f) Infertility, ART/IVS

g) Screening (Multiple Marker)

h) Teratogens

i) Cardiology

j) Metabolic Disease

k) Hematology

l) Neurogenetics

m) Fetal diagnosis/testing

n) Other specialty disease (with box for them to comment what the other is)

47. Are you a certified Genetic Counselor?

a) Yes

b) No

APPENDIX B: Supplementary Data

Table IX.

Reasons for providing clinical supervision	*n* = 210 % (n)
Enjoy supervising	72.9 (153)
Desire to give back to profession	71.9 (151)
Promotes professional development	71.9 (151)
Required/part of job description	51.9 (109)
Helps one keep current with literature	21.9 (46)
Salary benefits	1.0 (2)
Other	3.8 (8)

Table X.

Reasons for NOT providing clinical supervision	*n* = 69 % (n)
No local program	49.3 (34)
Recently graduated	40.6 (28)
Never asked	39.1 (27)
Have not worked in a clinical setting	24.6 (17)
I am not comfortable in my role as a GC	8.7 (6)
Don't feel competent as a supervisor	5.8 (4)
Not enough students	1.4 (1)
Other	5.8 (4)