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

It is entitled:

Barriers Impacting the Utilization of Supervision Techniques in Genetic Counseling

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Barriers Impacting the Utilization of Supervision Techniques in Genetic Counseling

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ABSTRACT

Clinical supervision is an essential element in training genetic counselors. It ensures that the students are well prepared to provide appropriate information and support to patients. Although live supervision has been identified as the most common supervision technique in genetic counseling, there is limited information on what type types of live supervision are used and what factors and barriers influence the use of live supervision and other techniques. Responses from 141 genetic counseling clinical supervisors were collected through an online questionnaire to investigate the use of supervisory techniques in the GC field by student type as well as examine barriers to implementing these techniques. Study results reinforced that all participants of the study used some type of live supervision. The three most frequently used techniques were co-counseling especially among novice students (96.1%), supervisor silent during session used with advanced students (94.0%) and student self-report also used with advanced students (61.2%). The barriers that were reported for the commonly used techniques included time, (during and after the counseling session), and concern about patient's welfare. Barriers that significantly influenced the use of video recording, audio recording and observing live remotely, included lack of facilities and/ or equipment for the technique and supervisors' concern about patient reactions to the technique. Understanding supervision techniques and their barriers may allow GC students to be more efficiently trained in the future by reducing supervisor burnout, therefore, possibly increasing the training capacity of GC programs.

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INTRODUCTION

One of the critical elements in training genetic counselors is clinical supervision. The ultimate goal of supervision is development of proficiency in the specified field. Clinical supervision encourages student learning and self-awareness where the supervisee can identify with the responsibilities of being a counselor (Beattie, 1998; Fowler, 1996; Spence, Cantrell, Christie, & Samet, 2002; Ward & House, 1998). It ensures that the students are well prepared to provide appropriate information and support to patients (Zahm, Veach, & LeRoy, 2008). Supervision also provides an opportunity for genetic counseling trainees to sharpen their skills by allowing them to recognize their strengths and weaknesses when taking on roles in clinic (Hendrickson, Veach & Leroy, 2002). Other fields that use clinical supervision include careers in the mental health fields such as psychology, marriage and family therapy and social work (Lindh, Veach, Cikanek, & LeRoy, 2003).

Although clinical supervision in the mental health professions has been utilized for nearly a century now, there are some professionals in that field that still view it as the least developed feature of clinical education (Goodyear & Bernard, 1998; Kilminster & Jolly, 2000). To emphasize the importance of clinical supervision, the American Psychological Association's Committee on Accreditation which accredits professional education and training in psychology added clinical supervision as a fundamental area of training at the doctoral and practicum levels and it has become one of the top five ways in which psychologists devote their time (Peake, Nussbaum, & Tindell, 2002; Robiner & Schofield, 1990; Walter & Young, 1999). While supervision is not one of the core competencies in GC, it is very important. In the genetic

counseling (GC), clinical supervision includes critiquing case preparation, assessing student performance, and providing feedback addressing the supervisee's professional progress. Despite the importance of clinical supervision and its impact in the field, research on the types of supervisory techniques utilized for GC students is limited (Lindh et al., 2003).

Supervision Techniques

There are a number of clinical supervision techniques that are widely used in the counseling fields. These techniques include; live supervision, video recording review, audio recording review and student self-report. Different supervision techniques allow supervisors to use a variety of methods to evaluate their students. Understanding the various techniques available is critical to assessing how they impact the way supervision is carried out. Live supervision is the most common supervision technique utilized in training medical professionals and has been in existence for over 50 years (Champe & Kleist, 2003). Live supervision is also used to train professionals in clinical settings such as genetic counseling, marriage and family therapy, counseling, social work, psychology, psychiatry, and other specialties in the mental health field (Champe & Kleist, 2003). Live supervision can be defined in various ways including co-counseling or co-therapy, supervisor present in the session but remains silent, and remote observation (Hendrickson, Veach, & LeRoy, 2002; Marini & Stebnicki, 2009; Smith, 2009). Co-counseling or co-therapy provides the student an opportunity to experience what a counseling session entails by participating in the parts of the session they are able to and observing their supervisor at other points in the session (Smith, 2009). When the supervisor remains silent in the session, it allows the student to have full control of the session while safe-guarding the

patient's well-being because the supervisor can intervene if necessary (Smith, 2009). Remote observation allows the supervisor to watch the session from another room and observe how the student and the patient interact without being seen by either of them (Marini & Stebnicki, 2009).

Live supervision is one of the techniques most frequently used in counseling fields; however, despite its prevalence and seemingly established mode of clinical supervision, it is not very well understood (Champe & Kleist, 2003). One of the biggest limitations of its use is the amount of time required and the heavy workload necessary to provide live supervision (Bubenzer & West, 1991; Romans, Boswell, Carlozzi, & Ferguson, 1995). Another limitation in live supervision is that students may continually view themselves as a "novice" or beginners and it becomes challenging for supervisees to progress into an independent role (Anderson, Rigazio-DiGilio, & Kunkler, 1995; West & Bubenzer, 1993). It is also feared that live supervision may hamper the development of the student's critical thinking and problem solving skills as supervisors can immediately intervene (Anderson et al., 1995).

Another commonly used group of supervision techniques is recording and review. The initial use of audio recording as a supervision technique was first seen in the 1940s in the psychotherapy field (Huhra, Yamokoski-Maynhart, & Prieto, 2008). Video recording was introduced in the 1960s. These techniques are utilized because information about sessions can be stored for future reference where supervisors can accurately evaluate the supervisees and the flow of the counseling session can be evaluated. Patients' and supervisees' nonverbals can also be assessed in video recording (Huhra et al., 2008). Both techniques provide an

opportunity for supervisee's to conduct a self-assessment and reflect on what occurred in the session. Students can appreciate first hand their pace in the session, interactions with the patient, and the overall flow of the session (Anderson et al., 1995; Smith, 2009).

Although there are a number of advantages to using audio and video recording as a supervision technique, a number of barriers have also been identified. A survey of clinical, counseling and school psychology program directors acknowledged several barriers to these approaches including "theoretical opposition", ethical concerns (e.g. HIPAA violations), concern about patient welfare, patient and supervisee reactions to the technique, and perceived ineffectiveness of the technique (Romans et al., 1995). With audio and video recording, the supervisor loses the opportunity to step-in or intervene during a session, causing the client's well-being to be potentially put at risk. It is also important to consider when using video or audio recording, not all students will be comfortable in front of the camera or in having their voice recorded. Their anxiety over this particular technique may affect the session and subsequently the patient's care (Anderson et al., 1995).

Lastly, clinical supervisors may use student self-report. School psychology programs identify student self-report as the most common supervisory technique used (Romans et al., 1995). In student self-report, the student discusses the entire case with the supervisor, including his or her own self-reflections of the case after a counseling session (Smith, 2009). The main benefit that is reported to using student self-report is the efficiency of this technique. Student self-report requires no set-up of equipment and the supervisor does not need to be present during the session (Smith, 2009). However, there are limitations to using student self-

report including supervisees purposefully leaving out information about a session that might present them in a negative light. Supervisees' choices to exclude information about a session could be due to embarrassment for making clinical mistakes or concern that they might receive a bad evaluation (Smith, 2009).

Supervision Techniques in Genetic Counseling

In the genetic counseling (GC), clinical supervision includes critiquing case preparation, assessing student performance, and providing feedback addressing the supervisee's professional progress. Despite the importance of clinical supervision and its impact in the field, research on the types of supervisory techniques utilized for GC students is limited. A quantitative study in genetic counseling found that majority of supervisors used live supervision as the main supervision technique when compared to other techniques (Lindh et al., 2003). An earlier study investigated supervision in genetic counseling by conducting focus groups with GC students and supervisors and found that the most predominantly used supervision technique was co-therapy and it was identified by supervisors to be an essential and effective technique that encourages students to develop their counseling skills (Hendrickson et al., 2002). Both students and supervisors reported that live supervision aids in students' improvement of their genetic counseling skills through "in-vivo learning". In addition, having the supervisor present in the session provides support to the student, especially when assistance is needed in providing additional information and/ or providing psychosocial counseling to the patients. Immediate feedback is also able to be given following a session; whether it is of an area needing improvement or highlighting a strength portrayed during the session (Hendrickson et al., 2002).

GC's reported two major limitations of live supervision to be time commitment and the amount of work that has to be done before and following each session (Hendrickson et al., 2002; Lindh et al., 2003). In a similar study, a majority of supervisors reported that they sat with 'beginner' students for an entire session whereas supervisors were more likely to let students run sessions unobserved if they were 'advanced' students (Lindh et al., 2003).

At this time, there has been no systematic investigation in genetic counseling to look at barriers to the use of different supervisory techniques in the GC field. Factors influencing the use of live supervision and other techniques were not examined in previous studies. The purpose of this research project was to identify supervision techniques utilized in genetic counseling programs, how often these techniques are used, and the barriers supervisors faced when implementing various supervision techniques. Examining barriers to the use of available supervision techniques will provide further insight into the reasons for the predominant use of live supervision in the GC field and determine the feasibility of eliminating barriers for other supervision techniques. By identifying barriers to the use of different supervisory techniques from perspectives of individual supervisors as well as genetic counseling program directors, we may begin to address these barriers.

METHODS

This study was approved by the Institutional Review Board approval at Cincinnati Children's Hospital Medical Center and The University of Cincinnati (Study # 2012-1639).

Participants

The sample population for this study was genetic counseling program directors and genetic counseling clinical supervisors. Genetic counselors who had never provided supervision were excluded from the study.

Questionnaire

An online questionnaire was developed (Appendix 1) to assess the supervisory techniques used by the genetic counseling clinical supervisors and what barriers they faced in the utilization of the techniques. Genetic counseling program directors were asked similar questions about supervisory techniques used within their training program and barriers to utilizing the techniques. The questionnaire was developed by the research team which included 2 genetic counselors, a counseling psychologist, a statistician, and a genetic counseling student. The questionnaire had 24 questions and three sections. The first section of the questionnaire was the demographic section and included questions about age, sex, race, level of education, whether participants graduated from an American Board of Genetic Counseling (ABGC) Accredited Program, were certified genetic counselors, primary area of practice, and the number of years of clinical practice. The second section had questions related to supervisory

and clinical experience including primary area of supervision, number of students supervised, supervision techniques used, the type of student for which the techniques is used (novice, intermediate, and/or advanced), and barriers supervisors face when they implement supervisory techniques. The third section was made available to program directors of genetic counseling programs and asked questions on the types of supervision techniques available in their program, the techniques program directors support in their program and the barriers to use of each supervision technique in their programs.

The supervision techniques included in the questionnaire included live supervision, review of video recording, review of audio recording, and review of student self-report. Since different definitions exist in the psychology and genetic counseling literature regarding the meaning of live supervision, this category was further sub-divided into: live supervision/co-counseling/co-therapy; live supervision/supervisor present but silent in the room, and live supervision/observe from outside the room (e.g. two-way mirror) (Hendrickson et al., 2002; Marini & Stebnicki, 2009; Smith, 2009). The list of barriers to use of the supervision techniques was developed based on the supervision experience of the research team and review of the literature in other counseling fields (Romans et al., 1995).

The questionnaire was tested for face validity with an advanced practice genetics nurse who currently provides supervision to genetic counseling students and a genetic counselor who had provided clinical supervision in the past. We also pre-tested our questionnaire with the University of Cincinnati GC program director and assistant program director. Based on the comments from the face validity testing, modifications to the questionnaire were made.

Data Collection

The questionnaire was administered online using SurveyMonkey. Recruitment was done through the National Society of Genetic Counselors (NSGC) email distribution service (eblast). A survey cover letter and link to the online survey was sent to all members of the NSGC. A reminder email was sent two weeks after the initial invitation.

Data Analysis

Supervisors: Proportions were calculated for frequencies of the different supervision techniques being used, the frequency of each supervision technique used with each type of student (novice, intermediate, advanced), frequencies of the barriers encountered for each supervision technique, and frequencies of the preferred supervision techniques if barriers were not a factor. For each supervision technique, the generalized estimating equation (GEE) model was used to test if the use of the supervision technique was different across different types of student. Logistic regression model was employed to infer the barriers that significantly influenced the use of each supervision technique. Fisher's exact test was used to investigate if there was any significant difference in supervision techniques used between experienced supervisors and non-experienced supervisors. An experienced supervisor was defined as having at least 5 years of supervision experience and non-experienced supervisors were defined as having less than 5 years of supervision experience. Fisher's exact test was also performed to look for any evidence of association between supervision techniques and primary areas of supervision.

Program Directors: Proportions were calculated and compared to examine if both program directors and clinical supervisors perceived the same barriers for each supervision technique.

RESULTS

Demographics

Of the 226 survey participants, 172 completed the online survey and 141 met the inclusion criteria. Ninety seven percent (137/141) of the participants were female, 92.2% (130/141) were Caucasian/ White and had a mean age of 34.3 years old. The majority of the respondents, 99.0% (139/140) specified that their highest level of education was either MA/ MS/ MSc/ ScM with the remaining 1.0% (1/140) indicating that they held a PhD. All participants graduated from an American Board of Genetic Counseling Certified (ABGC) program (100.0%; 141/141) and majority of them were board certified (96.4%; 135/140) (Table I). The top three areas of supervision included Cancer Genetics, Pediatrics and Prenatal/ Screening with 28.8% (40/139), 26.6% (37/139) and 24.5% (34/139) respondents respectively (Table II). A total of 5.2% (9/172) participants were program directors.

Table I: Demographics

Characteristics

Sex N=141	
Male:	2.8% (4/141)
Female:	97.2% (137/141)
Age N=139	
<30:	35.3% (49/139)
30-44:	51.8% (72/139)
>45:	12.9% (18/139)
Race N=141	
Caucasian/ White:	92.2% (130/141)
African American/ Black:	0.0% (0/141)
Biracial/ Multiracil:	1.4% (2/141)
Hispanic/ Latino:	0.7% (1/141)
Other:	5.7% (8/141)
Years of Supervisor Experience N=140	
<1 year:	23.6% (33/140)
2-5 years:	39.3% (55/140)
6-10 years:	22.1% (31/140)
11-15 years:	6.4% (9/140)
16-20 years:	4.3% (6/140)
>20 years:	4.3% (6/140)
Highest Education Degree N=140	
MA/MS/MSc/ScM:	99.0% (139/140)
PhD:	1.0% (1/140)
Certified Genetic Counselors N=140	
Yes:	96.4% (135/140)
No:	3.6% (5/140)
Graduated from an ABGC Program N=141	
Yes:	100.0% (141/141)
No:	0.0% (0/141)

"Other" for race includes: Asian and Ashkenazi

Table II: Primary Area of Supervision

AREA OF PRACTICE	PERCENTAGE OF RESPONDENTS
Cancer Genetics	28.8% (40/139)
Pediatrics	26.6% (37/139)
Prenatal/ Screening	24.5% (34/139)
Fetal diagnosis/ testing	5.8% (8/139)
Other (ex. other specialty clinics, laboratory, combination of clinics)	5.0% (7/139)
Adult (including complex disease)	2.9% (4/139)
Cardiology	2.9% (4/139)
Neurogenetics	2.2% (3/139)
Hematology	0.7% (1/139)
Metabolic Disease	0.7% (1/139)

Supervision Techniques

Of the 141 clinical supervisors, 100% indicated that they used co-counseling/ co-therapy. This was closely followed by supervisor silent during session (98.6%) and, review of student self-report (64.7%). Less than 10% of supervisors reported using observing live from outside the room, video recording, and audio recording (Table II). Ninety six percent of supervisors stated that they used co-counseling/ co-therapy when supervising novice students and 94.0% of the supervisors used supervisor silent during session with advanced students. Results also showed majority of supervisors, 61.2%, used review of student self-report with advanced students (Table III).

Table III: Frequency of Supervision Techniques and by Student Type (N=141)

SUPERVISION TECHNIQUE	NOVICE	INTERMEDIATE	ADVANCED	ANY STUDENT
Live supervision: co-counseling/ co-therapy	96.1%	93.7%	74.1%	100.0%
Live supervision: supervisor present but silent during session	26.2%	65.9%	94.0%	98.6%
Review of student self-report	46.6%	50.0%	61.2%	64.7%
Audio recording review	6.8%	7.1%	6.9%	8.8%
Video recording review	2.9%	2.4%	3.4%	4.4%
Live supervision: observe live from outside the room (ex: two-way mirror)	1.0%	2.4%	3.4%	4.4%

The Generalized Estimating Equation (GEE) was used to test if the use of each supervision technique was different across student training levels. Co-counseling/ co-therapy was more frequently used for novice and intermediate students than for advanced students ($p < 0.001$), supervisor silent during the session was less likely to be used for novice students than for advanced students ($p < 0.001$), and review of student self-report was more likely to be used with advanced students ($p < 0.001$) than for novice students Barriers

The most common barriers for each technique can be found in Table IV below. For co-counseling and supervisor silent during session, time burden during the session was frequently reported. For observing live remotely, video and audio recording lack of facilities and/ or equipment was reported by more than 50% of the supervisors. For student self-report, supervisors reported the main barrier as being their concern about more supervisors reported that they were concerned about their patient welfare.

Table IV: Common Barriers for Each Supervision Technique

	PERCENTAGE OF RESPONDENTS
Live supervision: co-counseling/ co-therapy	
Takes too much time during the counseling session	37.8% (37/98)
Takes too much time after the counseling session	17.4% (17/98)
Your concern about patient reactions to this technique	13.3% (13/98)
Live supervision: supervisor present but silent during session	
Takes too much time during the counseling session	32.9% (32/97)
Your concern about patient welfare	25.8% (25/97)
Takes too much time after the counseling session	20.6% (20/97)
Live supervision: observe live from outside the room (ex: two-way mirror)	
Lack of facilities and/ or equipment for this technique	82.3% (102/124)
Your concern about patient reactions to this technique	36.3% (31/124)
Your concern about patient welfare	31.5% (39/124)
Video recording review	
Lack of facilities and/ or equipment for this technique	75.6% (96/127)
Your concern about patient reactions to this technique	52.0% (66/127)
tLogistical and/ or institutional requirements (e.g. patient consent)	32.2%(41/127)
Audio recording review	
Lack of facilities and/ or equipment for this technique	66.1% (82/124)
Your concern about patient reactions to this technique	48.4% (60/124)
Logistical and/ or institutional requirements (e.g. patient consent)	35.5% (44/124)
Review of student self-report	
Your concern about patient welfare	36.0% (36/100)
Takes too much time after the counseling session	23.0% (23/100)
Do not believe technique is effective at achieving supervision goals	21.0% (21/100)

Logistic regression model was employed to explore the barriers that significantly impede the use of each supervision technique. One hundred percent of supervisors reported using co-counseling/ co-therapy; therefore no factors impacted its use. Barriers that significantly influenced the use of supervisor silent during the session, were supervisors did not believe the technique was effective at achieving supervision goals (*p=0.004.)* and their lack of training/ experience with the technique (*p=0.004*). The use of audio recording was significantly influenced by lack of facilities and/ or equipment for this technique (*p=0.008)* and concern about patient reactions to the technique (*p=0.03*). More barriers significantly influenced the use of student self-report than the other techniques. The most significant barrier was concern about patient welfare (*p=0.000003*). Other barriers included logistical and/ or institutional requirements (e.g. patient consent, institution's policy) (*p=0.0003),* concern about patient reactions to this technique (*p=0.0004),* technique not effective at achieving supervision goals (*p=0.001)*, unfamiliarity with the technique (*p=0.005),* lack of training/ experience with the technique (*p=0.008*) and the technique took too much time after the counseling session (*p=0.010).* Fifty percent of supervisors reported that they would prefer using co-counseling/ co-therapy if barriers were not a factor and 0.7% of supervisors reported that they would use audio recording and student self-report each if barriers were not a factor (Table V).

Table V: Frequency of Preferred Supervision Techniques if Barriers Not a Factor (N=141)

SUPERVISION TECHNIQUE	PERCENTAGE OF RESPONDENTS
Live supervision: co-counseling/ co-therapy	50.4%
Live supervision: supervisor present but silent during session	35.8%
Live supervision: observe live from outside the room (ex: two-way mirror)	10.2%
Video recording review	2.2%
Audio recording review	0.7%
Review of student self-report	0.7%

Supervision Techniques, Experience and Primary Area of Supervision

Fisher's exact test was used to investigate if there is any significant difference in supervision techniques used between experienced supervisors and non-experienced supervisors. In this study, an experienced supervisor was defined as having at least 5 years of supervision experience and non-experienced supervisors were defined as having less than 5 years of supervision experience. The use of co-counseling, supervisor silent during session, observing live, video recording and audio recording were independent of supervisor experience. Experienced supervisors were statistically more likely to use self-report than non-experienced supervisors (*p=0.042.*) The odds ratio for experienced supervisors vs non-experienced supervisors to use student self-report was 2.3. A Fisher's exact test was also used to find associations between primary area of supervision and the type of supervision used. There was no significant difference among different primary area of supervision in the use of co-counseling/ co-therapy, supervisor silent during session, observing live from outside the room, video recording and audio recording. However, there was a significant difference in the use of student self-report across different primary areas of supervision (*p=<0.0004*). More

supervisors used this technique in Pediatrics and Prenatal/ Screening compared to Cancer Genetics.

Program Directors

A total of 9 program directors responded to the survey. There are currently 34 accredited genetic counseling programs in North America so this represented 26.5% of all genetic counseling program directors. The percentage of the program directors who reported that they would support use of each supervision technique in their program is reported in Table VI. Due to the small sample size, statistical analysis to explore differences between supervisors and program directors was not completed.

Table VI: Program Directors' Support of Supervision Techniques (N=9)

SUPERVISION TECHNIQUE	PROGRAM DIRECTORS SUPPORT
Live supervision: co-counseling/ co-therapy	88.9%
Live supervision: supervisor present but silent during session	88.9%
Live supervision: observe live from outside the room (ex: two-way mirror)	77.8%
Audio recording review	66.7%
Video recording review	55.6%
Review of student self-report	55.6%
Other	11.1%

DISCUSSION

All participants in this study report that they use some type of live supervision in training genetic counseling students. This finding is consistent with previous studies which found live supervision to be the primary technique used to train GC students(Hendrickson et al., 2002; Lindh et al., 2003). However, the current results went further by defining what types of live supervision genetic counselors use. The three types of live supervision outlined in this study including co-counseling, supervisor silent during session, and observing live remotely, were used variably among student types. Supervisors were more likely to use co-counseling with novice students than with advanced students and were more likely to use supervisor silent during session with advanced students than with intermediate and novice students. The majority of the participants (92.9%) did not utilize observing live remotely, therefore differences in use between student types was not identified.

These study results also showed student self-report was used more often by the participants with advanced students (61.2%) than was previously reported (38.9%) (Lindh et al., 2003) and was the third most commonly used supervision technique after co-counseling and supervisor silent in the session. Self-report was more frequently used with advanced students rather than with novice students. The questionnaire did not distinguish when different techniques were being used exclusively or in combination for an individual student. Therefore, it is impossible to know how often participants were using student self-report as the sole supervision technique.

The study results also provided a more complete understanding of what factors, aside from student experience level, influence the supervision techniques genetic counseling supervisors use. Experienced supervisors were more likely to use student self-report than inexperienced supervisors. A potential reason for this finding could be that experienced supervisors feel more comfortable assessing which students are capable leading sessions by themselves or because they have more familiarity with how to use this technique effectively. Previous research has shown that supervisors with more experience feel more confident and competent as supervisors (Lewis, 2012). It was also found that supervisors in pediatrics were significantly more likely to use student self-report than supervisors in cancer counseling. One possible explanation for this is that the team based collaborative approach to pediatric genetic counseling in most institutions allows students to perform parts of these sessions more independently without concern for impacting patient care. Supervisors whose primary specialty is prenatal were also significantly more likely to use student self-report than supervisors in cancer counseling. This could be for similar reasons or perhaps because of the repetitive nature of common indications in prenatal sessions, allowing for supervisors to permit students more independence after they have observed the student's counseling for a period of time. In either case, additional research would be necessary to understand supervisors' motivations for using different techniques.

Barriers

Understanding barriers to use of various supervision techniques helps in understanding what supervisors are experiencing with their supervisees in clinic. Addressing and reducing barriers may help alleviate supervisor burnout or expand the supervision techniques available to genetic counselors working with genetic counseling students. These are two important goals for the field of genetic counseling whose growth may be limited by the number of students that can be trained by each program which is often ultimately tied to the number and quality of supervised clinical experiences.

For those techniques most commonly used in genetic counseling, addressing barriers might help to reduce supervisor burnout. The top two most frequent barriers reported for co-counseling was that it takes too much time during and after the session. These findings were consistent with the results by the Hendrickson et al (2002) qualitative study in which genetic counselors reported supervisors identified co-counseling to be an effective technique that encouraged students to develop their counseling skills. However, the amount of workload was the biggest limitations of this technique. For the technique supervisor silent during session, most supervisors also reported that it takes too much time during the session and they were concerned about their patient's welfare. Finally, for student self-report the barriers frequently reported were concern about patient welfare and that it takes too much time after the session. While small sample size for program directors does not allow for statistically significant comparisons between barriers identified by program directors and supervisors, comments from program directors who did respond such as *"time is the greatest barrier to effective supervision*

*in genetic counseling. Practicing counselors are on a tight schedule and the patients are their first priority (as they should be) and taking the time to effectively work with a student in the clinical setting is difficult." s*hows that program directors are aware of the time barrier. Providing built-in time in a genetic counselor's job for providing supervision is one way to address the time burden identified by supervisors. However, often genetic counselors are employed by institutions other than the one that houses the training program which may make this protected time difficult to obtain. In addition, whether at the same or different institutions, budget concerns may prevent administrators from providing time specifically for supervision. Thus, time may be one of the hardest barriers to address. However, it is possible that with additional training in supervision techniques, supervisors may learn to use these techniques in ways that make the techniques more efficient and more effective therefore addressing both time and patient welfare concerns.

For techniques that are not commonly used now in genetic counseling, it may be most helpful to consider those barriers that influence whether the technique is used at all. Addressing these barriers may help expand the supervision options in the genetic counseling field. Barriers that significantly influenced the use of supervisor silent during session was that supervisors felt they lacked training and experience with the technique and they did not believe the technique was effective at achieving supervision goals. The use of audio recording review was significantly influenced by lack of facilities and/ or equipment for this technique and supervisors' concern about patient reactions to the technique. Providing audio and video equipment would be an easy way to address the first of these barriers. It is also possible that if

genetic counselors are able to and encouraged to use this technique their comfort level with the technique will increase thereby increasing the comfort level of the patient. Finally, supervisors reported more barriers that significantly influenced their use of review of student self-report. The most significant was their concern about patient welfare. Other barriers reported included logistical and/ or institutional requirements, concern about patient reactions to this technique, they did not believe technique was effective, unfamiliarity with the technique, lack of training/ experience with the technique and that it took too much time after the counseling session. Again, many of these barriers might be addressed with additional training on how to use this technique effectively and when it is and is not appropriate for patient care in order to provide supervisors with the confidence and skills needed to perform this type of supervision. The barrier of time was contradictory to what Smith (2009) theorizes as the main benefit of student self-report saying that it is not time consuming. It is possible that supervisors in the current study are using student self-report in addition to some amount of live supervision which means the self-report is added time to an already time-consuming process. However, it is not possible to determine this from the present data.

While reducing barriers is one aspect to expanding use of additional supervision techniques, supervisors also need to be interested in using these techniques. However, in the current study, the vast majority of supervisors reported they would still prefer to use some type of live supervision if barriers were not a factor. This might show that even if barriers were to be eliminated and training and equipment for other techniques widely available and accepted; supervisors might still be hesitant to use these types of supervision techniques. However, it is

also possible that with training and additional familiarity, supervisors preferences might change.

In addition, this study only looked at preferences of those who are currently supervising students. As one program director in this study added "*not all genetic counselors, even if they are experienced in supervision, wish to be involved in clinical supervision, which in turn then becomes a barrier for program directors, i.e., potential supervisors lack interest in supervising students."* Exploring why certain genetic counselors are not interested in supervising students and which techniques they might be interested in may be helpful in addressing this barrier.

Limitations and Future Research

The limited number of genetic counseling programs means that a 26.5% response rate (9/34), we did not have enough program directors to better understand and compare the perceptions of barriers of program directors versus supervisors. Additionally, it would have been beneficial to ask our participants for ideas on how training programs could reduce the barriers they reported. Because supervisors are actively involved in the training field, their input in eliminating these barriers is vital. This study also focused exclusively on those who are currently genetic counseling supervisors. Individuals who do not currently supervise students may perceive different barriers. Therefore, there is no way to know if reducing the barriers identified in this study would result in engaging more genetic counselors in supervision. Understanding effectiveness of different supervision techniques at achieving the goals of

supervision is another important area of future research to inform training of future genetic counselors and future supervisors.

Conclusion

The results of this research study further defined what live supervision looks like in genetic counseling and when it is being used. Also, this was the first study to systematically identify barriers for each technique and which barriers are influencing the use of these techniques. Reducing barriers to supervision is an important goal if we are to consider ways to expand our field by expanding the number of genetic counseling students trained. While further work is needed to determine how best to use resources to reduce barriers to supervision, identifying these barriers is an important first step.

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Data Collection Form
Appendix 1 – Questionnaire

SUPERVISORY TECHNIQUES QUESTIONNAIRE:

1.) Are you a Program Director for an ABGC accredited Genetic Counseling Program?

- ☐ Yes, Program Director (*go to question 11*)
- ☐ Yes, Assistant or Associate Program Director (*go to question 2*)
- ☐ No (*go to question 2*)

2.) Do you currently or have you ever supervised Genetic Counseling students?

- ☐ Yes (*go to question 3)*
- ☐ No, Assistant or Associate Program Director (*go to question 11)*
- ☐ No (*go to question 15*)

3.) What is the primary area of practice in which you provide(d) clinical supervision? (*Check one*)

- ☐ Prenatal/ Screening
- ☐ Fetal diagnosis/ Testing
- ☐ Cancer Genetics
- ☐ Pediatrics

□ Adult (including complex disease)

□ Pre-Implantation Genetic Diagnosis (PGD)/ Preconception

□ Infertility, Assisted Reproductive Technologies (ART)/ In-Vitro Fertilization (IVF)

□ Teratogens

□ Cardiology

□ Metabolic Disease

□ Hematology

□ Neurogenetics

□ Other (Please specify): _____

4.) How many years total have you supervised Genetic Counseling students in a clinical setting (i.e. seeing patients)? (*Round to the nearest year*) _____

5.) How many genetic counseling students do you or did you typically supervise during a rotation?

_____

6.) How many genetic counseling students do you or did you supervise per year (on average) in clinical setting (i.e. seeing patients)?

_____

7.) For each of the following levels of student training, which supervisory technique(s) have you used? (Please check all that apply.)

	Novice	Intermediate	Advanced
a.) Live supervision: co-counseling/ co-therapy	☐	☐	☐
b.) Live supervision: supervisor present but silent during session	☐	☐	☐
c.) Live supervision: observe live from outside the room, (ex: two-way mirror)	☐	☐	☐
d.) Video recording review	☐	☐	☐
e.) Audio recording review	☐	☐	☐
f.) Review of student self-report	☐	☐	☐

8.) Are there other supervisory techniques that you use or have used that are not mentioned above? (If yes, please list supervisory technique(s).)

_____

9.) What barriers have you experienced with each of these techniques? Please check all that apply.

	Live supervision: co-counseling/ co-therapy	Live supervision: supervisor present but silent during session	Live supervision: observe live from outside the room, (ex: two-way mirror)	Video recording review	Audio recording review	Review of student self-report
Takes too much time before the counseling session						
Takes too much time during the counseling session						
Takes too much time after the counseling session						

Logistical and/ or institutional requirements (e.g. patient consent, institution's policy)						
Lack of facilities and/ or equipment for this technique						
Personal theoretical opposition to this technique						
Ethical concerns about this						

technique (ex. HIPAA violations)						
Your concern about patient welfare						
Your concern about patient reactions to this technique						
Your concern about supervisee reactions to this technique						
Do not believe technique is effective at achieving supervision goals						
Lack of support from program:						

program does not want me to use this technique						
Lack of support from program: financial resources for this technique						
Your lack of training/ experience with the technique						
Not familiar with the technique						

Other (Please specify type of barrier and for which supervisory technique the barrier is encountered):

	Live supervision: co-counseling/	Live supervision: supervisor present but	Live supervision: observe live from outside	Video recording review	Audio recording review	Review of student self-report

	co-therapy	silent during session	the room, (ex: two-way mirror)			

10.) If barriers were not a factor, what would be your preferred supervisory technique?

a.) Live supervision: co-counseling/ co-therapy □ (*go to question 15*)

b.) Live supervision: supervisor present but silent during session □ (*go to question 15*)

g.) Live supervision: observe live from outside the room,

(ex: two-way mirror) □ (*go to question 15*)

c.) Video recording review □ (*go to question 15*)

d.) Audio recording review □ (*go to question 15*)

e.) Review of student self-report □ (*go to question 15*)

Other (Please specify): _____

11.) What supervisory techniques are currently being used by clinical supervisors in the Genetic Counseling Program for which you are Director? (Please check all that apply.)

a.) Live supervision: co-counseling/ co-therapy □

b.) Live supervision: supervisor present but silent during session □

c.) Live supervision: observe live from outside the room,

(ex: two-way mirror) □

d.) Video recording review □

e.) Audio recording review □

f.) Review of student self-report □

Other (Please specify): _____

12.) What techniques would you support as supervisory techniques in your program? (Please check all that apply.)

a.) Live supervision: co-counseling/ co-therapy □

b.) Live supervision: supervisor present but silent during session ☐

c.) Live supervision: observe live from outside the room,

(ex: two-way mirror) ☐

d.) Video recording review ☐

e.) Audio recording review ☐

f.) Review of student self-report ☐

Other (Please specify): _____

13.) What are barriers to the use of each supervisory technique within your GC program? (Please check all that apply.)

	Live supervision: co-counseling/ co-therapy	Live supervision: supervisor present but silent during session	Live supervision: observe live from outside the room, (ex: two-way mirror)	Videotape review	Audiotape review	Review of student self-report
Takes too much time before the counseling						

session						
Takes too much time during the counseling session						
Takes too much time after the counseling session						
Logistical and/ or Institutional requirements (e.g. patient consent, institutions						

policy)						
Lack of facilities and/ or equipment for this technique						
Personal theoretical opposition to this technique						
Ethical concerns about this technique						
Your concern about patient welfare						

Your concern about patient reactions to technique						
Your concern about supervisee reactions						
Do not believe technique is effective/ does not achieve supervision goals						
Supervisors lack of training/ experience with the technique						
Not familiar with the technique						

Other (Please specify the barriers to the use of each supervisory technique within your GC program):

	Live supervision: co-counseling/ co-therapy	Live supervision: supervisor present but silent during session	Live supervision: observe live from outside the room, (ex: two-way mirror)	Video recording review	Audio recording review	Review of student self-report

14.) Please list any additional thoughts you have on supervision techniques and factors impacting their use?

_____

DEMOGRAPHIC QUESTIONS:

15.)What is your gender?

- □ Male
- □ Female
- □ Prefer not to answer

16.)What is your age? _____

17.)What is your ethnicity/ race? (Please check all that apply.)

- □ Caucasian/ White
- □ African American/ Black
- □ Biracial/ Multiracial
- □ Hispanic/ Latino
- □ Other (Please specify): _____

18.)What is your highest education level?

- □ MA/ MS/ MSc/ ScM
- □ PhD

□ MD

□ BSN/ RN

□ Other (Please specify): _____

19.) Did you graduate from an American Board of Genetic Counseling (ABGC) Certified Program?

□ Yes

□ No

20.) Are you a certified Genetic Counselor?

□ Yes

□ No

21.) What is your primary area of practice? (*Check one*)

□ Prenatal/ Screening

□ Fetal diagnosis/ testing

□ Cancer Genetics

□ Pediatrics

□ Adult (including complex disease)

□ Pre-Implantation Genetic Diagnosis (PGD)/ Preconception

□ Infertility, Assisted Reproductive Technologies (ART)/ In-Vitro Fertilization (IVF)

□ Teratogens

□ Cardiology

□ Metabolic Disease

□ Hematology

□ Neurogenetics

Other (Please specify): _____

22.)How many years of experience do you have practicing genetic counseling in a clinical setting (i.e. seeing patients). (*Round to the nearest year*) _____

Data Collection Form
Appendix 2 – Survey Email

For Genetic Counselors who have provided/ are providing supervision OR who are a Genetic Counseling Program Director

Dear Genetic Counselor,

You are invited to participate in a survey entitled, "Barriers Impacting the Utilization of Supervision Techniques in Genetic Counseling" which will assess the different supervision techniques utilized in genetic counseling, how often the supervision techniques are used and the barriers clinical supervisors and program directors face when implementing the supervision techniques.

This survey is for Genetic Counselors who have provided or are currently providing clinical supervision to Genetic Counseling students and for Genetic Counseling Program Directors. A link to the online survey is included in this email. Please follow the link to complete the survey. The survey will take most participants 10-15 minutes to complete. By completing the survey, you are indicating that you agree to participate in this study. Once you begin the survey, you cannot save your answers to complete the survey later.

Link: SurveryMonkey@SurveyMonkey.com

Thank you for your time and consideration. Your participation is greatly appreciated. If you have any questions regarding this survey, please feel free to email me at Abigail.Masunga@cchmc.org

Sincerely,

Abigail Masunga, BA
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Phone: 513-636-8448
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Data Collection Form
Appendix 3 – Survey Reminder Email

For Genetic Counselors who have provided/ are providing supervision OR who are a Genetic Counseling Program Director

This is a second request to participate in this survey related to clinical supervision. Thank you to those of you who have already completed the survey. Please contact Abigail Masunga directly with any questions (Abigail.Masunga@cchmc.org).

Sincerely,

Katie Wusik, MS, CGC

Carrie Atzinger, MS, CGC

Dear Genetic Counselor,

You are invited to participate in a survey entitled, "Barriers Impacting the Utilization of Supervision Techniques in Genetic Counseling" which will assess the different supervision techniques utilized in genetic counseling, how often the supervision techniques are used and the barriers clinical supervisors and program directors face when implementing the supervision techniques.

This survey is for Genetic Counselors who have provided or are currently providing clinical supervision to Genetic Counseling students and for Genetic Counseling Program Directors. A link to the online survey is included in this email. Please follow the link to complete the survey. The survey will take most participants 10-15 minutes to complete. By completing the survey, you are indicating that you agree to participate in this study. Once you begin the survey, you cannot save your answers to complete the survey later.

Link: SurveyMonkey@SurveyMonkey.com

Thank you for your time and consideration. Your participation is greatly appreciated. If you have any questions regarding this survey, please feel free to email me at Abigail.Masunga@cchmc.org

Sincerely,

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