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ARTICLE

A mixed-methods assessment of the Australasian Society of Genetic Counselors (ASGC) Mentor Program

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ABSTRACT

Purpose: In Australia and New Zealand, one third of genetic counselors have less than 5 years' experience. Sharing experienced practitioners' professional knowledge is needed as the profession grows. Formal mentoring is an important facilitator of career progression and shared knowledge. In 2022, the Australasian Society of Genetic Counselors developed a 6-month mentor program, matching mentees with experienced genetic counselors (>10 years). We aimed to evaluate and assess the overall satisfaction and acceptability of the program, the matching process, and barriers to participation.

Methods: We used an explanatory mixed-method design with cross-sectional surveys deployed at baseline and follow-up and opt-in semi-structured interviews. Interview transcripts were analyzed using codebook thematic analysis, and data were integrated in a narrative approach.

Results: Fifteen mentors and 15 mentees ($N = 30$) from 17 dyads were included in the analysis (response rate 83%). Eighteen completed the postprogram survey, and 12 were interviewed. The majority were female (93%), European (90%), and worked clinically in public hospitals (63%). Mentors' main reason for participating was "to give back to the next generation," whereas mentees sought "help with career progression." Time was a barrier to participating. The majority (89%) achieved their goals, and all participants would recommend the program. Most (61%) found the mentor/mentee matching to be excellent, and 44% believed they would continue the relationship after the program.

Conclusion: The Australasian Society of Genetic Counselors Mentor Program filled a gap in professional development within the Australian and New Zealand genetic counseling community and highlighted a general desire to share knowledge with new members of the profession.

Introduction

Genomic health care is expanding and becoming more integrated with mainstream health care.[1] With this growth comes the expansion of genetic counselor roles and positions. Genetic counseling as a process is defined as helping people to understand and adapt to the medical, psychological, and familial implications of genetic contributions to disease.[2,3]

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Growth in the profession of genetic counseling has necessitated professional regulation to protect the public from harm and to support the continual evolution of the profession.[4] The Human Genetics Society of Australasia provides professional regulation and promotion of the practice of human and medical genetics in Australia and New Zealand.[5] In 1993, the Human Genetics Society of Australasia formed the Australasian Society of Genetic Counselors (ASGC), which specifically represents and advocates for professional issues related to genetic counselors.[6]

Currently in Australia and New Zealand there are approximately 630 individuals with a genetic counseling qualification, around 400 of whom work in a clinical role.[7] This has increased from 480 individuals with a genetic counseling qualification in 2019.[8] Most practice in a hospital setting, but some work in private practice and nonclinical roles, such as laboratories, industry, policy, advocacy, education, and research.[9] However, census data show one-third of all genetic counselors working in Australia and New Zealand have less than 5 years' experience, and almost half of the profession had less than 10 years' experience.[7] The rapid growth has resulted in a relatively junior professional group who would benefit from the professional knowledge and skills of experienced genetic counselors. Although clinical supervision focuses on developing the clinical skills of genetic counselors, it does not focus on professional and career goals.[10]

Mentoring is defined as a process whereby an experienced professional (mentor) guides a less experienced individual (mentee) in their professional development.[11,12] Mentoring is a 2-way supportive relationship, which has a teaching-learning process.[13] During this process, one individual invests personal knowledge, energy, and time to help another individual grow and develop.[14] Often the process of mentoring can be conflated with role-modeling, sponsorship, counseling, or supervision.[15] In the setting of genetic counseling, mentor-mentee relationships differ from that of clinical supervision because they encourage development in areas outside of clinical practice.[15]

Mentor programs affect both junior and senior health professionals in their career satisfaction and development.[16] Both mentors and mentees can benefit from mentor programs through networking, offering/gaining professional and personal advice, moral support, and guidance.[14,16,17] Mentoring affects mentors by increasing productivity, career satisfaction, and personal gratification.[14,16] Through mentoring, mentees show improved communication styles in the workplace, improved capability to chair and participate in meetings, and increased confidence to have difficult conversations in the workplace.[17] Regular investment in mentor programs by organizations also sees a generational benefit, whereby the mentees will eventually become mentors and thus contribute to the ongoing professional development of the organization.[18] In genetic counseling, the benefits of mentorship are recognized with development of a mentor program by professional societies, such as the US National Society of Genetic Counselors (NSGConnect).[19] More recently, programs have been developed to mentor student genetic counselors throughout training[20] and in student research projects.[21] With the role, recognition, and need for genetic counselors expanding around the world,[9] building the career development of genetic counselors is paramount to maintaining and increasing the workforce.

In 2022, the ASGC started a mentor program for its members, utilizing an online mentoring platform. By providing an in-house program, the ASGC hoped to remove inequity of access across the membership, where access to such programs may be at a genetic counselors own personal financial cost, or available through a limited number of workplaces. To participate, ASGC members were asked to submit an expression of interest outlining their goals for the program, these goals were then used to match the mentors to mentees. Mentees could have any level of experience working as a genetic counselor. Mentors needed to have at least 10 years' experience.

A third-party online mentoring platform was used to assist with program administration tasks, such as goal setting, communications, and providing mentor and mentee training. Although there are other platforms that offer mentoring programs in person, genetic counselors in Australia and New Zealand are a small geographically dispersed profession; therefore, an online mentoring platform was deemed to be most suitable. Use of the online platform also helped to provide distinction between mentoring and supervision, which genetic counselors are required to attend as part of maintaining their professional standards.[3] Participants in the program were asked to commit to a minimum of 5 hours across 6 months, which comprised 2 hours of training, and at least 3 1-hour meetings with their matched mentee/mentor. An overview of the training, midpoint check in, and optional "wrap-up session" are provided in Supplementary introduction mentor program overview.

This study aimed to evaluate the ASGC Mentor Program, particularly participants views on the overall satisfaction and acceptability of the program, the matching process, and barriers to participation.

Materials and Methods

Study design

We used a sequential explanatory mixed-methods design[22] to evaluate the mentor program. The theoretical framework of content analysis underpinned our study, allowing for a flexible and integrated approach and practical solutions to be developed for real-world impact. We used cross-sectional surveys before and after the program, as well as an optional semistructured interview at the conclusion of the program. This manuscript has been reviewed against the consolidated criteria for reporting qualitative research.

Participants

All individuals enrolled in the mentor program either as a mentor or mentee were invited to participate via email. If no response was received from the initial email, up to 2 reminders were sent 1 week apart. Consenting participants were asked to complete a baseline survey before the start of the program in May 2022. At the completion of the mentor program in November 2022, participants were sent the follow-up survey, with up to 2 reminders sent. Those who completed the follow-up survey had the ability to opt in for an interview. Interviews were held between December 2022 and February 2023. All demographic information and surveys were collected using Research Electronic Data Capture tools hosted at the Garvan Institute of Medical Research.[23,24]

Surveys

Baseline and follow-up surveys were developed by the research team and based on questions from previous studies.[14] The baseline survey included questions on demographic information, previous experience with mentoring, and goals for participating in the mentoring program. The baseline survey was completed by all participants before their first dyad meeting. The follow-up survey was sent at the conclusion of the program and focused on participants' overall evaluation of the mentor program, the preprogram training, the connection with their mentor/mentee, their goals, and the online platform. Questions included 5-point Likert scales, as well as open ended questions. A copy of each survey can be found in Supplementary methods baseline survey and follow-up survey.

For those participants that opted in, semistructured interviews were conducted at the conclusion of the mentor program. The interview guide was developed by the research team before the review of the survey data and based on previous mentor program evaluations.[17] Questions built on the topics explored in the follow-up survey, including barriers and enablers of participation, reasons for participating, and overall experience. A copy of the interview guide can be found in Supplementary methods interview schedule.

Interviews were conducted by J.S., who is independent of both the genetic counseling profession and the ASGC. Because the genetic counseling profession in Australia and New Zealand is still relatively small, an interviewer who was not a genetic counselor was used to reduce likelihood of response bias (eg, that interviewees might be unwilling to be honest about the program if interviewed by someone known to them). Only J.S. and the interviewee were present during each interview. All interviews were recorded and transcribed verbatim, the transcripts were deidentified before analysis.

Data analysis

Quantitative data are presented as proportions, and qualitative data were analyzed using codebook thematic analysis.[25,26] Coders R.M. and H.C. both analyzed 25% of interview transcripts to derive overarching themes present in the data, these were developed into a codebook. H.C. then used the developed codebook to analyze the remaining transcripts. All data collected within this evaluation are integrated through narrative analysis within the Results section. The narrative approach sought to understand the identified themes in the context of the mentoring program.[27] Specifically, a weaving approach is taken whereby qualitative and quantitative data are presented together in a theme-by-theme basis.[28] All quotes are taken from the post program interviews and open ended questions in the post participation survey.

Results

There were 36 genetic counselors in the program. Of these, 31 consented to participate in this evaluation and completed the baseline survey (response rate = 86%). Two mentees dropped out of the program because of time constraints, with 1 electing for their data that were already collected to be included in this evaluation; therefore, 30 responses were included in the baseline survey. There were 15 mentors and 15 mentees from 17 mentor/mentee dyads. Eighteen (60%) completed the follow-up survey (10 mentors and 8 mentees) from 12 dyads. In 6 dyads, both the mentor and mentee completed the follow-up survey. Twelve participants opted to be interviewed (8 mentors and 4 mentees), median length of interview was 21.5 minutes (range 15-30 minutes).

Table 1 Demographics of the cohort

Participant Characteristics	All participants ($N = 30$) n (%)	Mentees ($N = 15$) n (%)	Mentors ($N = 15$) n (%)
Gender			
Female	28 (93)	14 (93)	14 (93)
Male	2 (7)	1 (7)	1 (7)
Years Practicing as a Genetic Counselor			
<5 years	7 (23)	7 (47)	0 (0)
5-9 years	7 (23)	7 (47)	0 (0)
10-19 years	9 (30)	1 (7)	8 (53)
>20 years	7 (23)	0 (0)	7 (47)
Year Completed Training			
1990-1999	4 (13)	0 (0)	4 (27)
2000-2009	13 (43)	2 (13)	11 (73)
2010-2019	6 (20)	6 (40)	0 (0)
2020-	7 (23)	7 (47)	0 (0)
Current Role			
Clinical role, Public Hospital	19 (63)	10 (67)	9 (60)
Clinical role, Private Service	3 (10)	1 (7)	2 (13)
Research	4 (13)	3 (20)	1 (7)
Academic	3 (10)	0 (0)	3 (20)
Other	1 (3)	1 (7)	0 (0)

Demographics

Table 1 outlines the sample characteristics for the baseline survey respondents. Participants were primarily female (93%), of European ancestry (90%), and worked in a clinical role within a public hospital (63%). These demographics reflect that of the ASGC's membership,[8] suggesting that our sample is broadly representative. There were 2 (13%) mentees with over 10 years genetic counselor experience. Twenty percent of participants had previously engaged with formal mentoring; however, only 1 person had engaged with formal mentoring as a genetic counselor.

The Likert scale questions gave a rating of various aspects of the program, including overall ranking, preprogram training, the matching process, and the online platform (Table 2). Where both members of the dyad completed the follow-up survey, answers corresponding to overall ranking of the program, the matching process, and the usefulness of the meetings were paired and examined for discordant responses. Only 1 pair had discordant answers on opposing ends of the Likert scale, where the mentee ranked the usefulness of meetings as "below satisfactory," and the mentor ranked them as "useful" (Table 2). In addition, the short answer survey responses and interview data were used to better understand these scores and opinion of the program. Five overarching themes of the codebook related to giving back, discussion of the platform, the time component of the program, opinions on the program as whole, and the relationship between mentees and mentors. A copy of the codebook can be found in Supplementary results coding tree.

Participant values and reasons for participating

Participants were asked to indicate their reasons for participating (Figure 1). The Mentors most important reason for participating was "to support the next generation." Mentees primary reasons for participating were "to gain advice about career progression" (53%) and "to learn from others" (40%).

Reasons for participating seemed to be reflected in participants' values which were explored during the interviews. Mentees spoke about the value they place on "learning and progression in terms of continued learning over time"

Table 2. Overview of quantitative results, numbers are depicted as *n* (%)

Program Evaluation	Poor	Below Satisfactory	Satisfactory	Very Good	Excellent
Overall ranking	0 (0)	0 (0)	3 (17)	8 (44)	7 (39)
Pre-program training	0 (0)	0 (0)	4 (22)	10 (56)	4 (22)
Matching process	0 (0)	0 (0)	4 (22)	3 (17)	11 (61)
Online platform	4 (22)	8 (44)	3 (17)	2 (11)	1 (6)
	Poor	Below satisfactory	Satisfactory	Useful	Very useful
How useful were the meetings	0 (0)	1 (6)	1 (6)	8 (44)	8 (44)
Frequency of mentor/mentee meetings over 6-month program period					
Six meetings	7 (39)				
Five meetings	0 (0)				
Four meetings	1 (6)				
Three meetings	4 (22)				
Two meetings	4 (22)				
One meeting	2 (11)				
How did you find the time commitment for the program (Minimum 5 hours across 6 months)					
Too much time	1 (6)				
Just right	16 (88)				
Not enough time	1 (6)				
Thinking back to the goals you indicated at the beginning of the program, would you say your goals were					
Met	16 (88)				
Unmet	1 (6)				
Unsure	1 (6)				

	Paired data					
	Overall ranking		Matching process		Useful meetings?	
	Mentee	Mentor	Mentee	Mentor	Mentee	Mentor
Pair B	Very good	Very good	Excellent	Excellent	Useful	Useful
Pair D	Satisfactory	Satisfactory	Satisfactory	Very good	Below satisfactory[a]	Useful[a]
Pair E	Very good	Excellent	Very good	Excellent	Useful	Useful
Pair G	Excellent	Very good	Excellent	Excellent	Very useful	Very useful
Pair I	Very good	Excellent	Satisfactory	Satisfactory	Useful	Very useful
Pair N	Very good	Excellent	Very good	Excellent	Useful	Very useful

[a]Discordant responses in paired data.

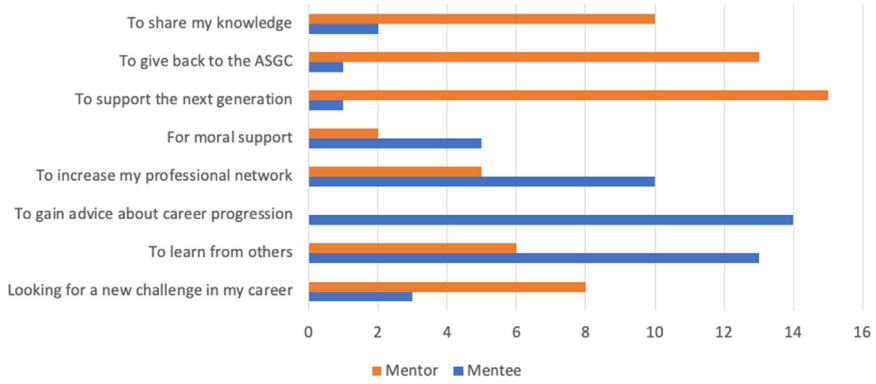

Figure 1 Reasons for participating in the program from both mentors (orange) and mentees (blue). Participants could select all that apply. *x*-axis indicates number of responses for each statement. ASGC, Australasian Society of Genetic Counselors.

(participant 15, mentee). Similarly, mentors commented on their desire to give back and support the next generation.

> "In terms of my own values, I really am grateful for the help and guidance that I got given over the course of my early career and even now. To be able to give back and support other genetic counselors and people in that way, I think it's really important, valuable." (Participant 14, mentor).

Overall, there was a positive response to the program, with all respondents in the follow-up survey reporting they would recommend the program to others. Most mentors (90%) and mentees (89%) would participate again themselves. Many participants believed the program aligned with their values and that the benefits of participating outweighed the barriers of time commitment.

> "I'd definitely do it again because of that networking opportunity and because there's so much that I don't know about other roles in the profession. So yeah, for me it's really good use of my time and I would prioritize it for that reason." (Participant 13, mentee).

Time commitment to participation

Half (50%) of the baseline survey respondents reported that time would be their largest barrier to participating. Participants elaborated on this in the interviews, suggesting that for the genetic counseling profession "time is always a challenge, for all of us" (participant 9, mentor). One participant commented that they knew of other ASGC members who were interested in the program but chose not to participate because of the lack of available time, "a lot can change in a year […] it might be something that they'd get value out of [in the future]" (participant 16, mentee).

Despite these anticipated challenges with time, 89% of those who responded to the follow-up survey believed that the time commitment of 5-hours across 6-months was "just right." In practice, some participants (44%) met this recommended time commitment, although many (39%) exceeded the recommendation by meeting more often. Flexibility in frequency of meetings allowed dyads to negotiate meetings to suit their schedules.

> "In the wrap-up session there were some mentees who talked about how they had monthly meetings or very regular meetings. Maybe even more frequently, and I was thinking to myself, 'oh wow, that sounds like a big time commitment.' That wouldn't have worked for me […] I could just be really flexible with the time I had available" (participant 15, mentee).

There was a mixed response between the participants as to whether 6 months was enough time for a mentoring program. In the interviews, 37% of mentors commented that 6-months was too short to achieve long-term career development; however, the only mentee who commented on this felt that they had achieved what they needed to in that time. The specific goals which participants created would have influenced the amount of time needed to achieve them.

> "The meetings should have been spaced out a little bit further because in terms of the differences and working on certain topics that we discussed, probably the timeframe of about 6 weeks is too short and maybe even once every 6 months is probably sufficient." (participant 29, mentor).

Overall, 89% of participants believed they had met their goals during the 6-month program. The 11% who did not achieve their goals reported that this was because they did not meet their partner often enough.

Mentor/mentee dyads matching and relationship

At follow-up, most participants (61%) found the matching process to be excellent, and none believed that it was below satisfactory or poor. One respondent reported that there were conflicts with their matched mentee/mentor because of misalignment of their goals. Participants commented how they felt "very well matched in terms of the ways that we like to work and the things that were important to both of us" (participant 15, mentee). Many viewed their relationship as being open and friendly and commented that "we had fun together" (participant 7, mentor). Even those who felt mismatched at the beginning of the program, discovered the complementary nature of their goals, and developed a worthwhile mentoring relationship.

> "I was quite surprised who they matched me with, because I was expecting like someone just out of their master's program or somebody who'd [been] working a year… But it turned out to be a real two-way thing..." (participant 10, mentor).

The majority (88%) of respondents in the follow-up survey reported their meetings were either useful or very useful. Both mentors and mentees reported feeling as though they "enjoyed it and it was a good experience" that they "learned a lot" (participant 14, mentor). Many mentees highlighted how having a dedicated space to consider their "professional goals and development outside of [their] clinical work" (participant 13, mentee) was something they had not experienced before, and they found was very helpful.

Mentors reflected that the program bolstered their confidence in the skills that they had developed over their career, with several mentors acknowledging that confidence was their greatest barrier to participating at the beginning of the program.

> "The information that I have in my head, which I just think is just normal that everybody has, is not, it comes with experience, and it comes with diversity in different roles. I guess doing this program helped me see that" (participant 8, mentor).

Beyond the program

Despite the positive views on the mentoring relationship, only 44% believed that they would continue the relationship with their mentor or mentee after the program concluded. Many felt that the mentoring relationship had achieved the goals that both parties had entered the program wanting to accomplish. Another reason could stem from the difficulty of "differentiat[ing] between supervision and mentoring" (participant 29, mentor) because several interviewees viewed this program as "one additional supervision" (participant 2, mentee), despite the differences between supervision and mentoring being outlined in the training. In contrast, one mentor felt that mentoring allowed them to provide more specific advice to their mentee.

> "This is what happens in your early career when you're starting off. Careful of this. Don't do this […] in being a mentor, you can be directive. Don't show up like this or don't put on that face and go for it. Don't let it get to you" (participant 7, mentor).

Both mentors and mentees commented on the perceived benefits of continuing a mentoring program in the future. Some mentors suggested that participating again would be for "the better of the Society [ASGC]… because we're all in this together" (participant 26, mentor). Largely, the reasoning behind both mentors and mentees desire for this program to work is because a mentoring program helps give direction to newer members of the profession.

> "I think there are more genetic counselors like me going through the uncertainty after they start practicing. If having this mentor program, at least there is someone who has gone through the similar journey can support you and may be able to offer you advice" (participant 21, mentee).

Recommendations for improvement

Although 89% would participate again in the program, there were several common suggestions for improvement. Within the baseline survey, only 20% of participants indicated that they had engaged with formal mentoring previously; therefore, a common recommendation was the inclusion of "some concrete examples of how […] to go about making goals and articulating" (participant 14, mentor) specific to mentoring. Some participants mentioned that it could have been helpful to hear about previous mentors and mentees experiences because it would help them better understand what could be achieved through mentoring.

A second recommendation was a change in the way dyads were paired. There were mixed opinions on whether dyads would have worked better if they were paired within the same geographical location. Some participants commented on how genetic counseling is such a small profession that individuals are more likely to know and/or work with those who live in the same geographical area. As such, ensuring that pairs are from different locations could allow them to speak freely about local challenges. Others believed that having a partner out of state introduced new challenges such as "the whole time difference" (participant 2, mentee) and lack of underlying knowledge of the governance structure.

> "We were in different states, and so having that limited background information about governance structures, and, because during our discussion we sort of talked about ambition and, you know, progression of career pathways, and not having that information was a disadvantage" (participant 29, mentor).

Regarding the matching process, several participants indicated that they would have preferred the ability to choose their own mentor or mentee. From mentors' perspectives, this stemmed from who they felt best suited to mentor, "I think in my career I can help this person the most" (participant 10, mentor), whereas for mentees, this stemmed from wanting to select mentors who had careers they wanted to emulate.

A final recommendation made by participants was that the program would be better suited as "an ongoing thing that people can have more of an opportunity to access" (participant 16, mentee). It was commented that this would better allow individuals to accommodate a mentoring program into their already busy schedules.

Discussion

This research formally evaluated a mentor program specifically designed for genetic counselors in Australia and New

Zealand. Overall, participants were supportive of the mentoring program. Reported reasons for joining were to give back (mentors) or to learn (mentees), indicating that this formal program helped fill a need within the genetic counseling community. This was echoed in the responses to the follow-up survey, in which all participants stated they would recommend the program to others. An online platform was used to allow connections to form between genetic counselors from across Australia and New Zealand, thereby enabling a more diverse spread of ideas.[29] The majority found the matching process excellent. The success of online mentoring, as well as in-person mentoring, tends to be determined by establishment of relationships based on trust, respect, and commitment.[30] Participants reported a general desire to share knowledge with new members of the profession, with time being the main barrier to participation.

Time commitment

Time required to participate affected participant satisfaction with the program. Across many different professions, time is an often-cited reason for not engaging with mentoring[31,32] and as such, was a key concern about participating in this and future mentoring programs. Because of the caring nature of health care professionals, informal advice or mentoring is often given to young professionals. This can lead to the mentors' time spent on informal mentoring being undervalued and unrecognized.[33] Formal programs that highlight and recognize the importance of mentoring are needed to ensure that participants are released to participate by their employers and therefore lessen the burden of informal interactions.

We chose a 6-month program to help serve a time poor community and gave the dyads the option to continue after the completion of the formal program. This is similar to other programs, such as the Franklin Women Program, which aims to support midcareer women move into leadership positions.[17] The Franklin Women Program runs for 6 months with a professional leadership and mentoring consulting company utilized for content delivery.[17] Other programs, such as NSGConnect, allow members to search a database for available mentors and mentees, giving them choice from a pool of members who have registered to the program. Resources are provided, and there is no formal start or end date.[19] Although this allows members to initiate mentoring at any point in time, it does not allow an easy option to finish the mentoring relationship. Further consideration will be given to the length of the ASGC program in future iterations.

Training

Participants gave suggestions to further develop the training provided in the program, specifically seeking examples from others with experience of mentoring. Many mentors expressed feeling as though they were too inexperienced to provide mentoring and were concerned that they would not have anything to give to their mentees. Mentoring is a deliberate activity that requires special skills to be developed by the mentor for the mentoring relationship to be successful.[31,34] There is a risk that without proper structure and skills, mentoring can inappropriately become personal therapy.[33] Future programs could consider implementing more mentoring training[34] and/or providing a space where mentors could share concerns, find solutions, and build confidence. Despite this initial lack of confidence from some mentors, their concerns of inexperience showed signs of abating in the follow-up survey and interview. Within the program, many mentors seemed to rely heavily on their skills as clinical supervisors, and there was a strong conflation between the 2 ideas of mentoring and supervision. Clinical supervision is a peer-support role based on a "clinically focused professional relationship between 2 health care professionals."[18] Mentor-mentee relationships differ from clinical supervision because they encourage development in areas outside of clinical practice.[15] Specific training outlining these differences is needed in future iterations of genetic counselor mentor programs.

The mentor/mentee relationship

At the heart of the mentoring process is the relationship between the mentor and mentee. A common recommendation by participants was for mentors and mentees to be able to select their partner, despite the majority indicating that they felt well matched in this evaluation. The reasoning behind this could be that mentors felt more comfortable in their abilities when a mentee was much more inexperienced than themselves. For mentees, it could be that they wanted the ability to take a more active role in their career development. Allen et al[35] showed that when mentees had greater input into the matching process, both mentees and mentors had greater satisfaction with the overall program. However, there are some practical limitations to consider if this choice is allowed. First, it is possible that many mentees request the same mentor. Second, a mentee may have no mentors willing to mentor them. Third, allowing this choice could increase likelihood of the "halo effect" occurring, whereby mentees feel unable to question their mentors, thereby stopping them from forming a beneficial 2-way relationship.[31,32]

Other programs use a variety of methods to form the mentor pairs. NSGConnect allow mentees to select their mentor from a pool of registered mentors.[19] The Franklin Women Program purposely match mentors and mentees from different organizations.[17] The variety of approaches reported in different mentor programs allows organizations and employers to develop a program that is feasible to implement, given the people and financial resources at their disposal. For the volunteer run ASGC, this was a significant consideration in designing this mentor program. A small educational grant was secured to assist with funding of this platform and prescribed matching was utilized to reduce the burden on volunteer organizers.

Psychological compatibility is an essential part of the mentoring relationship, and the perception of success of a mentoring program often relates to how well the relationship mimics organic mentorships.[31] Psychological compatibility relates to personalities, communication styles, and alignment of goals; if these are not matched, then the mentoring program is less likely to be effective.[36] Our results support this because participants who did not meet their goals attributed it to the relationship being ineffective. The matching process within the program relied on written expressions of interest of the participants, as well as the matching team's personal knowledge of the mentors and mentees. This strategy may not be feasible if the program were larger or ran more frequently.[37] Instead, matching could be done based on psychometric assessments to allow a standardized methodology of connecting participants. It could also be beneficial to suggest possible matches to mentors/mentees and allow for incorporation of their feedback about the match.[37]

Strengths

The strengths of this study were a good response rate across different time points and an explanatory mixed-methods approach that allowed an in-depth understanding of participants' opinion on the mentor program. The participants were representative of the ASGC membership that the sample was derived from, allowing the results discussed above to be applied to future mentorship endeavors.

Limitations

Because this program and evaluation were run by the ASGC, bias to responses could be present with those who were more neutral or felt negatively toward the program not feeling comfortable to share their views. An external researcher to the genetic counseling profession and the ASGC was used to conduct all interviews to reduce this potential bias. Participants experienced issues with the online platform and chose to communicate via other means (email and employer provided video conferencing); therefore, metadata on how often participants connected were inaccurate and not used in this assessment. Despite a response rate of 86%, the sample size was small and did not enable statistical analysis.

Implications and future directions

This program highlighted the importance of a mentor program specifically for genetic counselors working in Australia and New Zealand (see Table 3 for a summary of main findings). Important considerations must be given to the training provided, particularly outlining the difference between mentoring and clinical supervision. Future training could also include tangible examples of the role of mentoring in career development. Incorporation of psychometric testing is another consideration for future programs for potential use in both matching and also understanding a mentees personality type and how that affects career goals. Overall, mentors and mentees both found the program beneficial and would recommend it to others. Participants highlighted a desire to support the next generation of genetic counselors. Time was a considerable barrier for participation; therefore, time commitments should be carefully considered when developing formal programs. However, formal programs have the potential to reduce the amount of time spent in informal mentoring of both mentors and mentees and allow for recognition for the time spent participating in formal programs.

Table 3 Summary of findings

Summary of findings
The mentoring program facilitated the transfer of knowledge between experienced and emerging genetic counselors facilitating achievement of goals.
Participants identified time as a barrier; however, all recommended the program to others. Participants thought that the program was an effective use of their limited time.
Mentoring and supervision were conflated, with mentors relying on their skills as clinical supervisors. Increased mentoring training could be provided in future programs.
An online program facilitated mentoring relationships across geographical boundaries. The relationships were not hindered by being formed online.
Future programs could benefit from the matching process incorporating mentor and mentee input and relying on psychometric assessments to form partnerships.

Conclusion

The ASGC mentoring program was a well-accepted program that participants viewed as being a worthwhile use of their limited time. The program provided the majority of participants with the ability to reach their career-focused goals. The online program allowed relationships to form over diverse geographic boundaries. Further training on the difference between clinical supervision and mentoring is needed to reduce the conflation of mentoring with supervision and allow mentors to feel more confident in their abilities. Overall, this mentoring program filled a need within the Australian and New Zealand genetic counseling community. Continuation of a program could facilitate the transfer of tacit knowledge between experienced and emerging genetic counselors in a growing profession.

Data Availability

Anonymized data can be made available upon request and with appropriate agreements and human research ethics committee approval.

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Author Contributions

Conceptualization: L.Y., R.M., A.N., E.T., A.M., H.M.; Data Curation: H.C., L.Y., R.M., E.T., A.M.; Formal Analysis: H.C., L.Y., R.M., E.T., A.M.; Funding Acquisition: L.Y., R.M.; Investigation: H.C., L.Y., R.M., E.T., A.M., J.S.; Methodology: L.Y., R.M., A.N., E.T., A.M., H.M., J.I.; Project Administration: L.Y., R.M.; Resources: L.Y., R.M., E.T., A.M., J.I.; Supervision: L.Y., R.M., E.T., A.M.; Visualization: H.C., L.Y., R.M., E.T., A.M.; Writing-original draft: H.C.; Writing-review and editing: all authors.

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Ethics Declaration

Ethics approval was obtained from Sydney Local Health District (Royal Prince Alfred Zone) Human Research Committee (X22-0050). This was then ratified by the University of Technology, Sydney (ETH22-7500).

Conflict of Interest

J.I. receives research grant support from Bristol Myers Squibb unrelated to this work. All remaining authors have nothing to disclose.

Additional Information

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