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Holding the story, holding the professional: a pilot study of genetic counselling supervision in Portugal

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The increasing complexity of genomic medicine has intensified the emotional, ethical, and relational demands placed on genetic counselling professionals. In response to these demands, genetic counselling supervision has been increasingly recognised as a core component of safe and sustainable practice. However, its implementation across Europe remains uneven, and empirical evidence on feasible and acceptable supervision models in clinical settings is limited. This study reports a mixed-methods pilot evaluation of a narrative-informed, group-based genetic counselling supervision programme implemented within Portuguese public genetic services. This is a foundational component of the first phase of the MAG-SUDOE project, a transnational initiative supported by the Interreg SUDOE programme aimed at developing a joint supervision solution for genetic counselling professionals in Portugal, Spain, and France. Eight genetic healthcare professionals were recruited, and seven completed the intervention. Feasibility and acceptability were examined through participation and attendance rates, session evaluations, and assessment of the supervisory working alliance. Preliminary impact was explored using self-report measures of psychological well-being and perceived counselling quality, complemented by qualitative data from written narratives, semi-structured interviews, and a final focus group. The programme demonstrated high feasibility, with strong engagement and completion despite clinical workload constraints, and high acceptability, reflected in positive session evaluations and strong supervisory working alliance. Qualitative findings indicated that participants experienced supervision as a safe and reflective space that reduced isolation, supported emotional regulation, and enhanced reflective awareness. Overall, this pilot study provides promising indications of benefit for reflective practice and professional well-being, supporting its further adaptation and implementation within a transnational European framework.

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INTRODUCTION

The rapid expansion of genomic technologies and the integration of genomics into routine healthcare have increased the complexity, ethical challenges and emotional demands of genetic counselling practice [1–4]. Multiple studies document elevated levels of stress, compassion fatigue, and burnout among the genetic counselling workforce [5–7], highlighting the risk of professional exhaustion associated with emotionally demanding clinical environments [8, 9].

Against these challenges, genetic counselling supervision (GCS), conceptualised as a structured and contractual process that integrates reflective practice to support professional competence, resilience, and ethical decision-making [10], has gained recognition as an important component for safe, ethical, and sustainable professional practice [10–13]. Professional organisations (NSGC; ABCG; EBMG; ESHG) further recognise GCS as a core mechanism for promoting reflective practice, practitioner well-being, and high-quality patient care [14–16], embedding it on training and credentialing frameworks [9, 13, 17].

However, despite the theoretical and empirical rationale, the provision of GCS across Europe remains heterogeneous [12, 13].

In response to the lack of consistent implementation, GCS has increasingly leaned towards models from various disciplines, adapted for use in the genetic counselling context [10, 18]. Among

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these approaches, narrative-informed supervision may be particularly relevant to genetic counselling because it emphasises reflection, meaning-making, and the relational dimensions of clinical encounters [19]. These features closely align with the psychosocial, ethical, and communicative challenges that characterise genetic counselling practice. Also, at the European level this is one of the models that is gaining visibility and that has recent empirical data available [20].

To address these gaps, we implemented a pilot group-based GCS programme focused on three questions:

1. *Feasibility: Can a structured supervision model be delivered and sustained within the operational constraints of clinical genetic services?*
2. *Acceptability: How do clinicians perceive the structure, process, and value of the programme, and what benefits and barriers emerge?*
3. *Preliminary impact: Are there early indications of change in practitioner well-being, reflective capacity, or perceived counselling quality that justify progression to a larger-scale evaluation?*

This pilot study reports the first phase of the MAG-SUDOE Project (Ref: S2/4.5/P0159), a transnational initiative funded by the Interreg SUDOE Programme and aimed at developing a joint genetic counselling supervision framework across Portugal, Spain, and France. The Portuguese pilot was intentionally designed as the first implementation phase of the project, with the objective of generating initial evidence regarding the methodological design, feasibility, acceptability, and potential value of the proposed supervision model within a real-world clinical context. Findings from this phase will inform the adaptation, refinement, and subsequent implementation of the intervention. (MAG-SUDOE - Interreg Sudoe).

METHOD

Study design

We conducted a convergent mixed-methods pilot feasibility study. Quantitative and qualitative data were collected concurrently and given equal importance in assessing feasibility, acceptability, and preliminary impact. Integration occurred during interpretation through triangulation of quantitative and qualitative findings. The design comprised three phases: (1) pre-intervention evaluation, (2) intervention phase, and (3) post-intervention evaluation.

Ethical approval

The protocol was submitted and approved by the ethics committee of Hospital de Braga and of i3S. We obtained informed consent from all participants. Confidentiality and anonymity were guaranteed.

Participants and recruitment

Participants were professionals who provided genetic counselling within Portuguese genetic services, including genetic counsellors, medical geneticists, and genetic nurses involved in counselling activities. Recruitment targeted public genetics healthcare services within the Portuguese National Health Service (SNS), which comprised five public genetics services and genetics departments that do not hold formal service status [21]. Invitations were sent via email to eight service directors, who were invited to participate or nominate team members for the pilot GCS project.

Inclusion criteria: active engagement in genetic counselling practice; willingness to commit to GCS schedule; consent to participate.

Exclusion criteria: genetics professionals not directly involved in provision of genetic counselling (laboratory roles, research or administrative functions).

Intervention

This GCS pilot was based on established principles described recently [22] and implemented through group supervision sessions grounded in a narrative approach [20, 23].

The intervention was structured around three core components: (1) an oral supervisory agreement defining roles, confidentiality, goals, and expectations; (2) narrative-based group GCS; and (3) a safe, non-judgemental, peer-supported environment, moderated by a supervisor with expertise in GCS.

The programme followed a structured format, including an initial immersion session introducing objectives, format, and group agreements, followed by four online sessions (approximately 90 min each), each centred on one participant-selected real-life case.

All sessions were facilitated by the same supervisor (MFD), a qualified systemic and narrative practitioner with extensive expertise in narrative genetic counselling supervision.

Supervision followed a predefined narrative-informed structure based on the outsider witness model described by Ferrer-Duch et al. [20]. In each session, one participant presented a case while the remaining members acted as active observers. Selected participants (outsider witnesses) then shared structured reflections, followed by a group discussion to promote reflection, collaborative learning, and meaning making. Reflections focused on resonant aspects of the case, the personal and professional meanings evoked, and implications for future clinical practice. Given the pilot nature of the intervention, formal fidelity monitoring procedures were not implemented. However, all sessions followed the same predefined supervision structure and were facilitated by the same supervisor to ensure consistency of delivery across the programme.

Instruments

Mental well-being, stress, anxiety, and depression measures. Participants' mental well-being, perceived stress, anxiety, and depressive symptoms were assessed using Depression, Anxiety and Stress Scale—21 Items [24]. DASS-21 is a brief self-report instrument composed of 21 items distributed across three subscales.

This instrument was administered at pre-intervention and post-intervention.

Genetic counselling quality assessment scale. Perceived quality of practice in genetic counselling was assessed through self-report using Dimensions 2 and 3 of the Genetic Counselling Quality Assessment Scale [25], which focus on communication processes and relational aspects of genetic counselling.

The scale was administered at pre-intervention and post-intervention.

Brief working alliance questionnaire. The working alliance with the supervisor was assessed using the Brief Working Alliance Questionnaire [26].

During the intervention, the questionnaire was administered immediately following each GCS session and at post-intervention to monitor the development of the supervisory working alliance.

Written narratives of challenging cases. Prior to the intervention, participants were asked to provide between five and ten brief written narratives describing recent emotionally difficult or ethically challenging counselling cases. These narratives were introduced as a preparatory reflective exercise suggested by the supervisor to familiarise participants with narrative reflection before supervision sessions. They were not included in the formal qualitative analysis.

Session evaluation questionnaire. Participants' perceptions and satisfaction with each GCS session were assessed using a brief questionnaire developed specifically for this study. The questionnaire was validated by a team of specialists involved in the design and development of the pilot project. (Appendix 1). This was followed by an open-ended question asking participants to identify three key take-home messages from the session.

Semi-structured interviews. Qualitative data were collected through semi-structured interviews conducted at two time points. At pre-intervention, interviews explored challenging clinical cases, previous experiences with supervision, expectations, and perceived professional needs (Appendix 2). At post-intervention, individual retrospective interviews focused on participants' experiences of GCS programme and perceived impacts (Appendix 3).

Final focus group. At post-intervention, participants took part in a final focus group. The session was designed to explore shared experiences of the

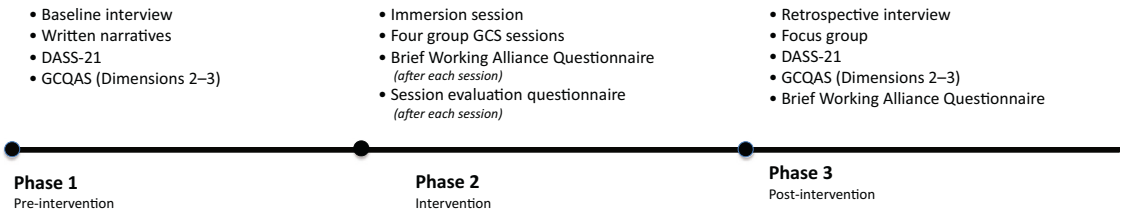


Fig. 1 Study design and data collection timeline. Legend: The pilot action consisted of three phases: (1) pre-intervention; (2) group online GCS and (3) post-intervention. DASS-21 Depression Anxiety Stress Scales-21, GCQAS Genetic Counselling Quality Assessment Scale, GCS Genetic Counselling Supervision.

supervision programme, perceived impacts on clinical practice and professional well-being, and recommendations for future implementation (Appendix 4).

Data collection procedures

Data collection was conducted using online and hybrid formats. Quantitative questionnaires were administered electronically via Google Forms, using secure links. Participants were informed that responses were confidential, handled exclusively by the research team, and not accessible to the supervisor.

To enable matching of pre and post intervention responses while preserving confidentiality, participants were assigned a unique identification number at the start of the study and asked to use it across all instruments. Data were pseudonymised.

Semi-structured interviews were conducted online via Microsoft Teams, audio-recorded with consent, and automatically transcribed, with transcripts reviewed for accuracy.

The final focus group was conducted in a hybrid format, with in-person and online participation. MP and LG moderated the session using a semi-structured guide exploring perceptions of the GCS pilot.

All data collection procedures were conducted in Portuguese. Qualitative data were initially analysed in Portuguese to preserve semantic depth and contextual meaning. Subsequently, selected excerpts and illustrative quotes were translated into English for reporting and publication purposes. Translation was carried out by members of the research team fluent in both languages. The timing of data collection across all phases and its alignment with GCS sessions is presented in Fig. 1.

Data analysis

To ensure methodological clarity, findings are presented distinguishing between qualitative participant reports, quantitative outcomes, and interpretative discussion. Qualitative data reflect participants perceived experiences, quantitative data refer to measured outcomes, and interpretative statements are explicitly identified when extending beyond the empirical findings.

Quantitative data were analysed using descriptive statistics (means, *M* and standard deviations, *SD*), and adherence rates (session attendance and completion of questionnaires). Missing questionnaire data were not imputed, and analyses were conducted using available-case analysis. Consequently, the sample size varied across assessments depending on questionnaire completion. One participant did not complete the baseline DASS-21 questionnaire and was therefore excluded from the descriptive statistics for that specific assessment. Qualitative data were analysed using thematic analysis of semi-structured interviews, following the approach described by Braun and Clarke (2006) [27]. Interview transcripts were read iteratively to ensure familiarization with the data, and initial codes were generated inductively. Codes were then grouped into broader themes through an iterative process of comparison and refinement. The development of themes was discussed among the research team, namely LG and MP, to enhance analytical rigour and consistency. Discrepancies were resolved through discussion until consensus was reached. Given that the value of GCS is often subjective, relational, and experiential, the qualitative component was essential for capturing these dimensions. Reflexivity was addressed through ongoing discussions among the research team regarding assumptions, professional backgrounds, and potential influences on interpretation. LG is a psychologist and researcher with postgraduate training in genetic counselling and a particular interest in genetic counselling supervision. MP is a senior researcher, genetic counsellor, and educator with extensive experience in genetic counselling practice and training. Throughout the analysis, the team considered how these backgrounds might shape interpretation, discussing emerging themes collaboratively to enhance reflexivity and analytical rigour. Although some researchers were professionally known to participants through the Portuguese genetics' community, no hierarchical or evaluative relationships existed.

The genetic counselling supervisor was not involved in data collection, coding, or analysis, had no access to participants' questionnaire responses, and had no pre-existing supervisory relationships with participants before the intervention. Integration of mixed-methods data was performed through triangulation of quantitative indicators with qualitative themes to provide a comprehensive assessment of the programme's feasibility, acceptability, and preliminary impact.

Table 1. Demographic and professional characteristics of participants.

Characteristic	*n*	(%)
Gender		
Female	5	71.4%
Male	2	28.6%
Professional role		
Medical Geneticist	6	85.7%
Genetic Counsellor	1	14.3%
Age group (years)		
30–39	3	42.9%
40–49	2	14.3%
≥50	2	42.9%
Years of professional experience		
<10 years	2	28.6%
10–15 years	1	14.3%
>15 years	4	57.1%
Practice setting		
Portuguese National Health Service (public sector)	7	100%
Previous access to formal genetic counselling supervision		
Yes	0	0%
No	7	100%

RESULTS

Participants

Eight professionals working in genetic counselling in Portugal entered the pilot project. One participant, a genetic nurse, withdrew after completion of the initial interview due to high work constraints. Seven participants completed the full supervision programme and post-intervention assessment, corresponding to a completion rate of 87.5%. No further dropouts occurred.

Participant characteristics are presented in Table 1.

Participants' main areas of practice included oncogenetics, paediatric/congenital anomalies, neurogenetics, and cardiogenetics.

When asked about their practice in genetic counselling, participants reported working across a broad range of contexts

Table 2. Summary of baseline needs, expectations, and prior supervision experience.

Theme	Illustrative descriptions
1. Prior experience	Most participants reported little or no prior experience with GCS. The pilot programme was perceived as an opportunity for professional reflection and growth, as well as a safe space to discuss challenging cases and emotions.
2. Expectations for supervision	Participants expected to reflect on complex or difficult cases, improve decision-making and emotional awareness, learn from peers through shared discussion, and strengthen self-awareness and patient-centred practice.
3. Main professional challenges	Key challenges included communication barriers with patients, the emotional impact of cases with no available treatment, ethical dilemmas (example: requests for inappropriate testing), and organisational constraints such as high workload and lack of dedicated spaces for reflection.
4. Coping and resilience strategies	Strategies included physical exercise, clear work-life boundaries, informal peer support, emotional compartmentalisation during consultations, and post-work reflection to process emotionally demanding cases.
5. Motivation for supervision	Motivations included developing reflective practice and emotional regulation, preventing burnout and promoting well-being, improving quality of care through self-awareness, and fostering a supportive professional culture in GC.

within genetics healthcare provision, including individuals with confirmed genetic alterations, at-risk, and family members of patients with known genetic conditions.

Pre-intervention results

Baseline needs, expectations, and prior supervision experience. Qualitative analysis of initial interviews and emotionally impactful counselling situations identified five themes (Table 2). Participants reported limited prior experience with formal GCS, relying on informal peer discussion or individual reflection, and viewed the pilot action as an opportunity for structured reflection. Expectations centred on professional development and reflective practice, particularly in managing complex cases and enhancing clinical decision-making and emotional awareness. Participants identified key challenges, including communication barriers, emotional impact in contexts with limited treatment options, ethical dilemmas, and organisational constraints such as high workload and lack of protected reflective time. Existing coping strategies included physical activity, work–life boundaries, peer exchange and emotional compartmentalisation. Motivation for participation reflected a strong commitment to professional well-being and quality of care, including improving emotional regulation, preventing burnout, and fostering a more supportive professional culture. A summary of themes and illustrative descriptions is presented in Table 2.

Baseline psychological well-being and distress. Baseline psychological well-being and distress were assessed using the Depression, Anxiety Stress Scale—21 (DASS-21) [24]. Baseline results indicated overall low levels of psychological distress across participants (Depression $M = 3.67$, $SD = 6.25$; Anxiety $M = 2.67$, $SD = 4.68$; Stress $M = 6.67$, $SD = 6.02$). Most participants ($n = 5$) were within normal ranges across all dimensions, with one participant presenting moderate symptoms. One participant did not complete the DASS-21 at baseline.

Baseline self-perceived counselling quality. Baseline scores indicated moderately high to high self-perceived counselling quality.

As shown in Fig. 2a, scores for Communication and Relationship were consistently high across participants ($M = 3.48$), with limited variability. In Fig. 2b, Evaluation and Reflection scores also remained above the midpoint ($M = 3.71$), although greater variability was observed for some participants. Variability between participants was low, with standard deviations generally below 0.8.

Intervention phase results

Engagement with the supervision process (attendance and supervisory alliance). Engagement with the GCS programme was high throughout the intervention. Attendance rates ranged from 71.4 to 100% across sessions, with absences attributed to work-related commitments or scheduled vacations (Appendix 5).

Participants also reported a strong supervisory alliance, assessed using the Brief Working Alliance Questionnaire.

Mean scores across all items were well above the midpoint of the scale, indicating high levels of comfort, collaboration, and shared goal alignment between participants and the supervisor as reported in Table 3.

Session evaluation. Participants completed evaluation questionnaires following each of the GCS sessions, the results of which are presented in Fig. 3.

Ratings were consistently above the midpoint of the scale across all sessions and dimensions.

Ratings varied across sessions, reflecting fluctuations in perceived impact over time rather than uniformly high responses. Perceived well-being was lowest during Session 2 ($M = 3.60$, $SD = 0.55$), while professional self-confidence and satisfaction increased across the later sessions following an initial adjustment phase, reaching their highest levels in Session 4. Confidence in communicating complex genetic information showed greater variability, with a decrease in Session 3 ($M = 3.40$, $SD = 0.89$) followed by a marked increase in the final session ($M = 4.80$, $SD = 0.45$).

Learning processes during supervision: take-home messages. Thematic analysis of participants' take-home messages identified four interconnected themes, reflecting progressive engagement with reflective practice and professional development. Supervision was experienced as a safe, non-judgemental relational space that facilitated open dialogue, mutual learning, and collective problem-solving. Dialogical communication and clinical reflexivity emerged as key learning mechanisms, supported by active listening, reflective questioning, and case discussion. Emotional awareness and professional self-regulation increased, with greater acceptance of uncertainty and more sustainable coping strategies. Finally, participants perceived supervision as strengthening ethical, patient-centred, and expectation-aware practice, reinforcing empathy, respect for autonomy, and clarity in clinical goals. A summary of themes and illustrative take-home messages is presented in Table 4.

Post-intervention results

Psychological well-being and distress. Post-intervention scores showed a slight increase across all dimensions (Depression $M = 4.57$, $SD = 3.60$; Anxiety $M = 4.29$, $SD = 5.71$; Stress $M = 10.86$, $SD = 7.47$), although values remained largely within

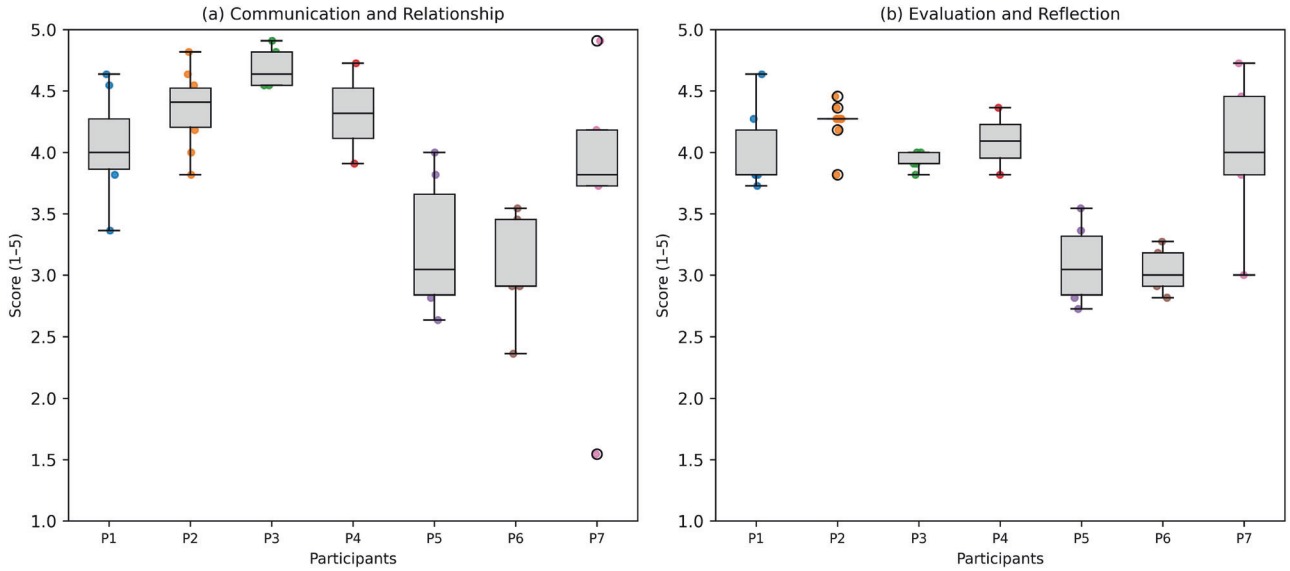


Fig. 2 Distribution of self-reported genetic counselling quality scores across participants. a Communication and Relationship; **b** evaluation and Reflection. Boxplots represent the distribution of repeated responses for each participant, with individual observations overlaid. The line within each box represents the median score for each participant. Points outside the box represent individual observations that fall outside the interquartile range, reflecting variability in participants' responses across sessions. Higher scores indicate higher self-perceived quality of genetic counselling practice.

Table 3. Descriptive statistics for the brief working alliance questionnaire.

Question	M	SD
I feel comfortable working with my supervisor	6.41	0.24
My supervisor values my explanations about client's behaviour	6.41	0.24
My supervisor treats me as a colleague during supervision sessions	6.09	0.55
I work on specific goals with my supervisor during supervision sessions	5.70	0.46
My supervisor is careful and systematic when considering the material I bring to supervision	6.09	0.33

Mean (M) and standard deviation (SD) scores are presented for each item assessing participants' perceptions of the supervisory working alliance across sessions. Higher scores indicate a stronger perceived working alliance.

non-clinical ranges. Most participants remained within non-clinical ranges ($n = 4$), a small number reported mild symptoms ($n = 2$), and one participant presented elevated anxiety and stress levels.

Working alliance. At post-intervention, participants reported high levels of perceived working alliance with the supervisor, as presented in Table 5. Mean scores across all items remained above the midpoint of the scale, indicating sustained perceptions of collaboration, and goal alignment within the supervisory relationship.

Qualitative post-intervention findings. Four themes were constructed through thematic analysis, integrating data from post-intervention individual interviews and the final focus group:

1) **Development of reflective practice and professional awareness**

Participants described GCS as providing time and space to step back from routine clinical work and engage in reflection about professional practice. Sessions were referred to as a protected space where participants could examine their actions, assumptions, and habitual responses. Participants also reported increased awareness of the emotional impact of genetic counselling and described integrating emotional responses into reflections on practice.

"We need to stop for a moment and think about how we work, otherwise everything becomes routine, and we stop noticing what is around us." (P4)

"We repeat things so many times that it becomes like a scratched record, and we stop paying attention. When a situation becomes more complex, it requires more attention, but routine makes that difficult." (P5)

2) **Emotional regulation and validation of professional experience**

Participants reported that supervision provided support in managing emotional demands associated with clinical work. They described developing emotional distance in complex situations and referred to the group as a context where uncertainty and professional difficulty could be shared and normalised.

"It helped me create some distance so I could analyse the situation better and give a more appropriate response." (P7)

"It is very important to feel validated to realize that the way we work is not wrong and that these difficulties are normal." (P4)

3) **Strengthening relational and communicational competencies**

Participants described changes in attention to communication processes, including listening to verbal and non-verbal cues and reflecting on how they interact with patients. References were also made to non-directive communication and respect for autonomy in complex situations.

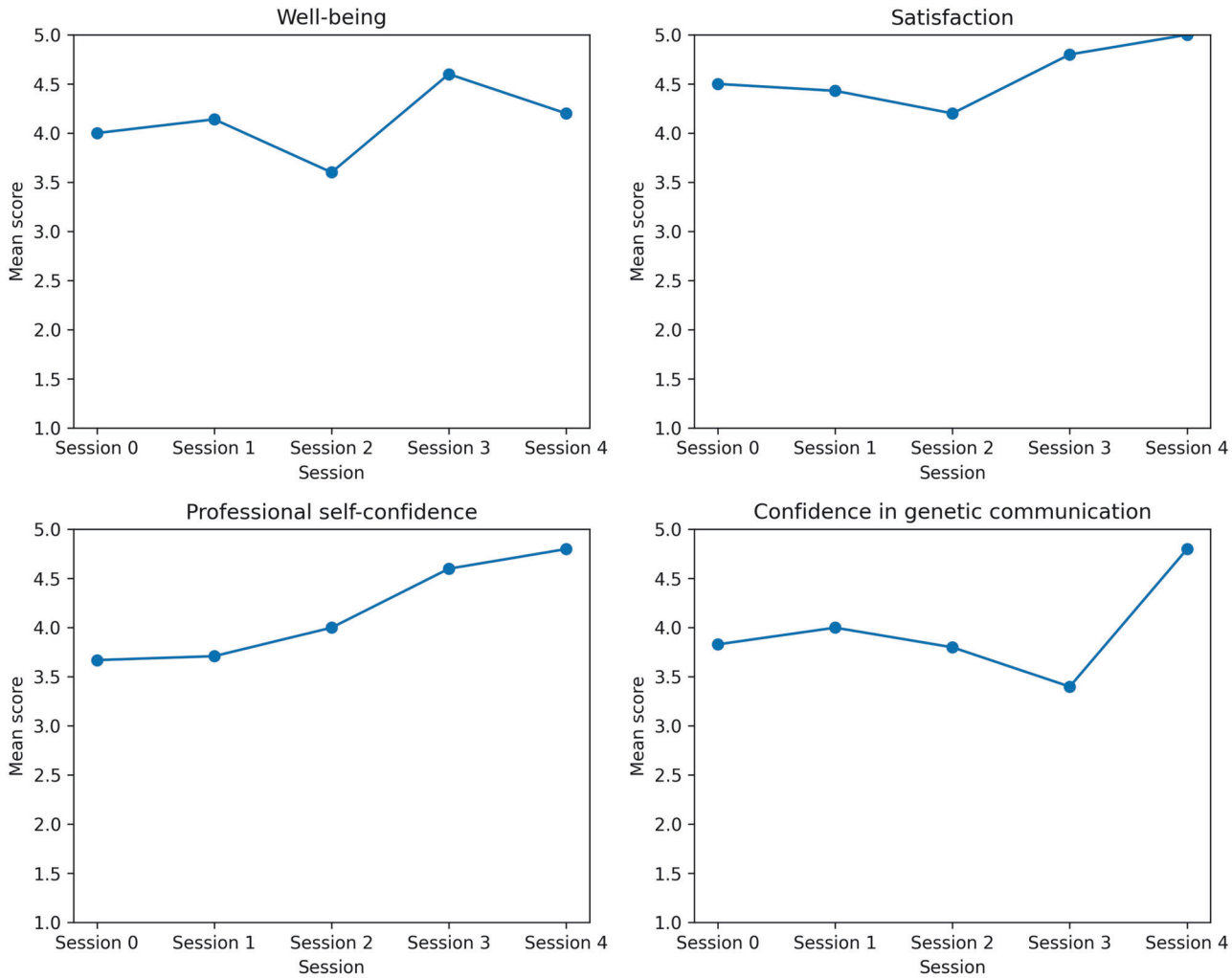


Fig. 3 Trends in session-specific self-reported outcomes across dimensions. Trends in session-specific self-reported outcomes across dimensions. Each panel displays mean scores for one dimension across sessions (Immersion session to session 4), based on participants' post-session evaluations. Variations across sessions reflect changes in perceived well-being, satisfaction, professional self-confidence, and confidence in genetic communication over time.

"Listening is not just hearing words. It is listening behind the words and reflecting on what is really being communicated." (P3)

"*Even in very complex situations, we have to respect the person's autonomy and not impose our own point of view."* (P7)

4) **Supervision as a continuous professional practice**

Participants referred to GCS as relevant across different stages of professional development and highlighted learning through peer exchange. The role of supervision in supporting ongoing professional practice was repeatedly mentioned.

"With supervision we can correct things much faster, things that could drag on for a long time it's like a turbo: it intensifies and corrects quickly." (P6)

"Supervision should be part of our professional life; it helps us improve continuously and not just rely on how we learned in the past." (P2)

DISCUSSION

This study represents the first GCS intervention with Portuguese genetic healthcare professionals, and, to our knowledge, the first group-based programme grounded in a narrative therapy approach in the national context. In line with previous research [28], findings indicate that, despite limited prior exposure to structured GCS, participants experienced supervision as a meaningful space for personal and professional development, addressing the emotional, relational, and organisational demands of genetic counselling practice. This aligns with prior evidence highlighting limited access to structured supervision and reflective practice in Portugal [11] and in several European countries, where GCS provision remains variable in terms of access, structure, and institutional support. [12, 17].

Participants described GCS as an opportunity to step outside the pace of clinical work and engage in structured group reflection. The group context was described as fostering solidarity [29] and providing a space to collectively explore the complexity of clinical cases, facilitating clarity through shared reflection. These reflective pauses supported critical examination of assumptions, habitual responses, and decision-making, consistent with narrative supervision frameworks [30] and literature showing that group supervision can reduce

Table 4. Participants' take-home messages from the GCS sessions.

Theme	Illustrative take-home messages
Supervision as a relational and reflective learning space	*Space to think, safety.* *Confidence, responsibility and sharing.* *Team / sharing experiences / co-creating solutions.*
Dialogical communication and clinical reflexivity	*A careful listening and capacity of observation will improve our interaction with patients.* *We must register what the patient says, not what we interpret.* *Respond with tools so people can reach conclusions themselves.*
Emotional awareness and professional self-regulation	*Stress at work prevents us from communicating properly as humans.* *Control of emotions.* *Importance of accepting what we cannot change.*
Ethical, patient-centred, and expectation-aware practice	*Importance of ethical conduct.* *Perceiving the feelings of others.* *Clarify the objective of each consultation.*

The table presents key themes and illustrative take-home messages reported by participants following the GCS sessions, reflecting perceived learning in relational, communicational, emotional, and ethical domains of practice.

Table 5. Statistics for the brief working alliance questionnaire at post-intervention.

Question	M	SD
I feel comfortable working with my supervisor	6.48	0.87
My supervisor values my explanations about client's behaviour	6.39	0.96
My supervisor treats me as a colleague during supervision sessions	6.15	0.98
I work on specific goals with my supervisor during supervision sessions	5.82	1.10
My supervisor is careful and systematic when considering the material I bring to supervision	6.18	0.95

Mean (M) and standard deviation (SD) values are presented for each item assessing participants' perceptions of the supervisory working alliance following the intervention. Higher scores indicate more positive evaluations of the supervisory relationship.

burnout and professional isolation while promoting mutual support [28, 29, 31].

Participants also described frequent exposure to emotionally demanding situations, uncertainty, and ethical complexity. Supervision was described as supporting the integration of these experiences into professional practice, and as enhancing emotional awareness and reflexivity, as reported in previous studies [5, 32, 33].

In parallel, quantitative findings showed a slight increase in distress levels post-intervention, particularly in stress and anxiety scores However, most participants remained within non-clinical ranges. Given the small sample size and baseline variability, these findings should be interpreted cautiously, and no clinical interpretation of individual-level change should be inferred from these group-level descriptive trends. Several explanations are possible, including increased emotional awareness associated with reflective and meaning-making processes [34], external workload pressures, or contextual factors unrelated to the intervention.

The narrative approach may be particularly suited to this context, given its focus on complexity and non-linear understandings of professional experience [30, 35–37]. Participants described GCS as a safe space for emotional expression while supporting the development of adaptive emotional distance, enabling practitioners to remain empathically engaged without becoming overwhelmed. This balance reflects commonly reported coping strategies, such as compartmentalisation and peer support [33, 38], and highlights supervision as a structured alternative to individual coping mechanisms.

Importantly, supervision also validated the emotional and ethical challenges inherent in genetic counselling. Participants reported that shared reflection helped reduce feelings of isolation and self-criticism, addressing previously identified gaps in organisational support and protected reflective time. These findings are consistent with literature suggesting that supervision may strengthen professional development and long-term well-being [32, 39].

While many supervision models emphasise emotional safety [40, 41], narrative approaches additionally foreground issues of meaning-making [42], offering a framework for exploring professional experience. Within this context, the supervisory working alliance emerged as a central mechanism. The strong and sustained alliance observed may have supported engagement, adherence, and openness to the process, reinforcing its relevance for future implementation.

Participants also reported meaningful changes in communication practices, particularly in relation to active listening and emotional attunement [43, 44]. Supervision was described as encouraging greater attention to both verbal and non-verbal communication, supporting a more reflective and patient-centred approach. In parallel, participants emphasised a renewed commitment to non-directive practice and respect for patient autonomy, especially in ethically complex situations. These findings align with evidence that supervision may enhance both internal reflective processes and the quality of patient–professional interactions [45, 46].

Participants described peer discussion as a key mechanism of learning, strengthening collective identity and providing diverse perspectives on clinical and ethical challenges [33]. This collaborative process also helped mitigate organisational constraints, such as workload pressures and limited reflective space [5], reinforcing supervision as a context for integrating emotional, ethical, and organisational dimensions of practice [39].

Participants strongly supported the integration of GCS as a routine component of professional practice, viewing it as essential for maintaining quality of care, emotional resilience, and ongoing development [17, 40]. The narrative group format used in this study appeared particularly effective in fostering trust, reflective depth, and practice-relevant learning [19, 20]. High engagement levels further suggest that structured supervision can be feasibly integrated into demanding clinical settings [5, 33].

The composition of the participant group should be interpreted within the Portuguese context, where genetic counselling is not yet a formally regulated healthcare profession and is often provided by medical geneticists [21]. Although this study focused on GCS, the perspectives reflect professionals involved in delivering genetic counselling rather than a predominantly

genetic counsellor workforce. This context may influence how GCS is perceived and should be considered when comparing these findings with countries where genetic counselling is an established profession. Notably, the strong engagement with supervision among medical geneticists is a novel finding. As supervision has traditionally been associated with other health professions, the value attributed to GCS by medically trained professionals suggests its relevance may extend across multidisciplinary genetics services and professional groups involved in genetic counselling. From a feasibility perspective, the programme functioned as a sustainable reflective structure rather than an additional burden. Participants reported direct applicability to clinical work, including case formulation, emotional processing, and relational awareness, consistent with evidence that supervision enhances reflective capacity and practice development [17].

The intervention was highly acceptable, with safety, trust, and openness highlighting the central role of the supervisory working alliance. [47] These findings align with evidence that GCS supports coping, reduces isolation, and strengthens communication in genetic counselling contexts. [5, 33, 43] Participants described improved capacity to manage emotionally demanding and ethically complex situations. These perceptions suggest potential benefits for professional practice and well-being, although such outcomes were not directly measured in the present study and should therefore be interpreted as exploratory.

STRENGTHS AND LIMITATIONS

This study has several methodological strengths. The mixed-methods pilot feasibility design enabled a comprehensive assessment of implementation, acceptability, and preliminary impact, combining quantitative measures with qualitative data from interviews, narratives, and a focus group. Although the sample size was small and not powered for statistical significance, this approach provided a nuanced understanding of participants' experiences.

The study was grounded in a clear theoretical framework based on narrative approaches to supervision and implemented through a structured and transparent format, enhancing replicability. Recruitment through public genetic services ensured real-world applicability, and the inclusion of medical geneticists and genetic counsellors reflected the multidisciplinary nature of genetic counselling.

Several limitations should be acknowledged First, the small, self-selected sample limits statistical interpretation and may have introduced selection bias, as professionals with greater interest in GCS may have been more likely to participate. Second, the absence of a control group precludes attributing observed changes directly to the intervention. Third, reliance on self-report measures and subjective accounts may have been influenced by social desirability bias. Fourth, post-intervention assessment occurred shortly after programme completion, preventing evaluation of longer-term outcomes. Fifth, although all qualitative data were collected and initially analysed in Portuguese to preserve semantic depth, selected quotations were translated into English for reporting purposes. While translation was undertaken by members of the research team who were fluent in both Portuguese and English, some linguistic nuances may have been lost. Finally, as this pilot included only participants from Portuguese genetic services, transferability to other SUDOE countries should be interpreted with caution until subsequent implementation phases are completed. Future research should include larger samples, controlled designs, longer follow-up, and more objective indicators of professional practice.

CONCLUSIONS

This pilot study provides the first empirical evidence from a group of genetics professionals in Portugal on the feasibility and acceptability of a narrative group-based GCS programme and demonstrates the successful implementation of this first structured supervision initiative in this field at a national level. It is also notable that this GCS programme was mostly constituted by medical geneticists, for whom formal GCS has not previously been described. Despite limited prior exposure to formal supervision, participating professionals demonstrated high engagement, strong working alliance with the supervisor, and sustained participation, indicating that such an intervention can be realistically integrated into demanding clinical contexts.

Participants reported that narrative group supervision provided a meaningful reflective space that supported emotional regulation, reduced professional isolation, and strengthened core relational and communicational competencies central to genetic counselling practice. These findings reflect participants' experiences of the programme and should be interpreted alongside the quantitative results, which showed a slight increase in distress scores following the intervention. Participants also consistently described greater reflective awareness, validation of professional experiences, and renewed commitment to patient-centred and non-directive practice, highlighting participants' perceptions of the relevance of supervision for individual well-being and the quality of clinical interactions.

Overall, this pilot supports the institutionalisation of GCS as a continuous, collective professional practice rather than an optional or remedial intervention. The results provide empirical foundation for larger-scale studies examining effectiveness, implementation strategies, and long-term outcomes, and directly inform the next phases of the MAG-SUDOE project aimed at developing sustainable, transnational supervision models for genetic counselling professionals across the European SUDOE region.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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AUTHOR CONTRIBUTIONS

LG and MFD contributed equally to this work and share first authorship. LG was responsible for the conceptualization, methodology, data collection, data analysis, and drafting of the manuscript. MFD was responsible for the methodology, supervision design, and drafting of the manuscript. IC contributed to the conceptualization, methodology and manuscript drafting. AS, MRA, FAI, MTF, MFP, NDP, and PV contributed to the critical revision of the manuscript. MRH contributed to conceptual support, methodological guidance, and critical revision of the manuscript. MP was responsible for the conceptualization, methodology and conceptual supervision, data analysis, project coordination, and critical revision of the manuscript. All authors contributed to the final version of the manuscript, revised it for important intellectual content, and approved the final version for publication.

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COMPETING INTERESTS

The authors declare no competing interests.

ETHICAL APPROVAL

Ethical approval for this study was obtained from the Ethics Committee of ULS Braga (ref. 93_2024; 29) and from the Data Protection Officer at i3S - Institute for Research and Innovation in Health, University of Porto (11 July 2024). All procedures complied with GDPR requirements and institutional regulations. Informed consent was obtained from all participants in the study.

ADDITIONAL INFORMATION

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