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Preparing the Leaders of Tomorrow: Learnings from a Two-Year Community of Practice in Fragility Fractures

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ABSTRACT

To facilitate the development of leadership competencies in a multidisciplinary group of 18 emerging bone experts from 6 European Countries and Brazil, to face future scenarios in the evolving field of fragility fractures, and to support secondary fracture prevention and improve patient outcomes. Changes brought by the COVID-19 pandemic have further highlighted this need. A 2.5-year community of practice (CoP) programme was established with two senior bone experts acting as mentors. The content was adapted during the COVID-19 pandemic. The education impact of the programme was assessed using an ethics-approved mixed-method design consisting of multiple sources of qualitative and quantitative data collected longitudinally. Quantitative data were analysed descriptively. Qualitative data underwent a thematic analysis. After participating in the programme, participants reported increased interprofessional collaboration and communication skills, better understanding of health economics and negotiation, application of adult learning principles to their work setting, development of competencies to critically appraise guidelines, enhanced abilities to facilitate behaviour change in others, and improved confidence leading their team through crisis situations. Although time was required for some physicians to get accustomed to the CoP concept and develop trust with other members, it was described as a beneficial real-world learning experience. An educational real-world CoP programme was effective in enhancing leadership competencies among future leaders in the bone field to improve care of fragility fracture patients. The results presented could guide the development of other CoPs in fragility fracture care as leadership competencies are increasingly required in that field.

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Introduction

Fragility fractures are defined as “fractures resulting from mechanical forces that would not ordinarily result in fracture”, usually occurring in patients with osteoporosis [1]. Worldwide, osteoporosis causes nearly 9 million fractures annually [1]. Secondary fracture prevention and the delivery of optimal post-fracture care through coordinated care programmes such as Fracture Liaison Services (FLS) as well as the approval of new targeted osteoporosis therapies have provoked a paradigm shift requiring physicians to lead and facilitate change [2,3]. Through a multidisciplinary approach, FLS programmes allow for the prevention of secondary fractures, improvement of post-fracture outcomes, and the reduction of recurrent fractures [4].

Considering FLS implementation, the associated costs of an ageing population, complexity of managing musculoskeletal conditions, and the fact that many patients suffering from a fragility fracture are underdiagnosed [5–7], physicians in the field of fragility fractures do not only require knowledge of the disease and its treatments, but also good leadership competencies. As physicians are expected to lead in complex and changing environments, leadership competencies are becoming increasingly important to ensure optimal patient care [8].

A potential solution to facilitate physicians’ development of the competencies they require (such as leadership) is the implementation of a “Community of Practice” (CoP). A CoP is defined as a group of people “bound together by shared expertise and passion for a joint enterprise” [9], and has been shown to

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be effective in the development of professional skills and in the transfer of best practices by emphasising the social nature of learning [10]. The collaborative learning process and interactivity among members are crucial elements to ensure the success of CoPs [11].

Originally conceived in the business context, CoPs have been applied to the healthcare sector and have fostered enhanced collaboration, networking, and resource sharing between healthcare providers [12]. Although CoPs in the healthcare sector vary in terms of composition and methods utilised to facilitate exchanges between members, their overarching goal is to enhance learning and improve clinical practice [13].

Leadership today involves a multitude of competencies. For example, a leader needs notions of behavioural science and educational psychology, as well as emotional intelligence (defined as the capacity to identify, understand, and manage complex emotions both in oneself and in others [14]), to be able to drive behaviour change in patients and colleagues [15,16]. The approach of using adult learning principles, which is both evidence-based and tailored to specific audiences, is essential in a peer-to-peer continuous learning environment [17]. Leading a team effectively involves developing interprofessional collaboration with colleagues to achieve optimal patient outcomes [18]. Knowledge of health economics has become essential for physicians to have a better understanding of the costs and benefits of health services and collaborating with healthcare administrators on their implementation [19]. Considering the growing reliance on technology in healthcare, technological literacy has become integral in the daily work of physicians [20]. Similarly, developing resilience in healthcare is key to reduce the rate of medical errors and burnouts, and hence, to maintain a high quality of care delivered to patients [21].

To support future leaders in fragility fractures and improve their leadership competencies, a CoP programme was developed. The objectives were two-fold: 1) to engage an international group of physicians involved in fragility fracture care in a credible leadership professional development programme and provide them with a collective learning experience in their field, and 2) for participants to develop specific competencies in leadership, facilitate the translation of learning in their respective healthcare settings, and be able to lead in the care of osteoporotic or fragility fracture patients in the future.

Simultaneously, a longitudinal formative and summative ethics-approved assessment was deployed with the goal to assess the programme's impact and effectiveness on behavioural change. Although not aimed at

generalisability as a research study would be, the learnings from the development and deployment of this CoP in fragility fractures and the results of its programme evaluation provide a reflection opportunity for the fragility fracture and FLS communities.

Methods

Educational Design

Physicians both involved in the care of patients with fragility fractures from European and South American countries and recognised as future leaders in the field (based on their level of knowledge and expertise) were identified by the co-authors and invited to participate in the 2.5-year CoP programme. Selection of participants was not meant to be representative of the countries or professions covered. They were led by two expert mentors from the field of fragility fractures (co-authors BL & EC) and joined by one expert facilitator from the fields of behavioural science, implementation research, and continuing education (co-author SM).

The leadership programme, which was initiated in June 2018 and concluded in December 2020, included 11 interactive webinars, 3 live sessions, and an interactive website for the members. Four live sessions were originally planned but only 3 occurred due to the COVID-19 pandemic: the final live session was changed to 3 consecutive half-day interactive webinars (included in the total of 11). The topics and content of the different competency development activities were adapted to put more focus on resilience and capacity to lead in crisis situations considering the COVID-19 pandemic. Eight of the webinars (excluding the three replacing the final live session) were recorded and made available on the CoP website. Greater interactivity was implemented through increased discussion at the start of the webinar, and the inclusion of live chat and breakout group activities to develop solutions to issues presented within the webinar. The interactive website included a forum that all CoP members could access and either post or respond to colleagues regarding the webinars, specific topics/questions posted by the moderator, or some challenging situations or cases they have experienced in their practice.

The educational design of the CoP programme was developed based on the following 6 core competencies, which were identified in the literature [22]: 1) Behavioural science and educational psychology, 2) adult learning principles, 3) interprofessional collaboration, 4) healthcare economics, 5) technological literacy, and 6) leadership (including basic leadership skills, resilience, and leading in a crisis). Content was

developed by an interdisciplinary group of experts, including experts in bone health management (co-authors BL and EC) and in behavioural science, implementation research, and continuing education (co-author SM and HP in acknowledgements). Development was based on literature and discussions between experts and specific learning objectives were developed for each competency (see Table 1).

Programme Evaluation Design

A mixed-method design consisting of qualitative and quantitative data collection was used to evaluate the impact of the programme. Mixed-method designs provide multiple perspectives on the studied subject by combining the richness of context and meaning from qualitative data with measurable evidence from quantitative data [23,24].

This evaluation component of the CoP programme was granted approval from an international

independent ethical review board (Veritas IRB, Montreal, QC, Canada). Informed consent was obtained from each participant. No compensation (financial or otherwise) or educational credit was provided to the participants for their participation.

The sources of data comprised the following: 1) nine post-activity self-assessments for webinars and live sessions, including quantitative questions and open-ended qualitative questions; 2) in-depth one-on-one 20-to-30-minute semi-structured qualitative interviews with a sub-sample of consenting participants; 3) discussions from interactive webinar recordings and online forums (qualitative); and 4) live observations from the expert facilitator (qualitative). The quantitative questions from the self-assessments either tested participants' learnings with multiple choices questions or assessed the anticipated impact that the learnings would have on individuals' leadership (3-point scale, 1 = No or little impact, 2 = Moderate impact, 3 = Strong impact).

Table 1. Learning objectives for each core competency.

Core competency	Objectives
Inter-Professional Collaboration	<ul style="list-style-type: none"> • Advocate that healthcare professionals have a fundamental responsibility to work together to improve health outcomes for patients, families, and communities • Develop the leadership ability, self-confidence and skills to identify and deal with problems related to the inter-professional team • Foster mutual respect among team members • Demonstrate collaborative interactions – such as communication, responsibility, accountability, coordination, cooperation, assertiveness, autonomy – and the sharing of skills and knowledge to improve patient care • Review of motivational interviewing, to enhance communication skills, with patients and colleagues
Economies of the Healthcare System	<ul style="list-style-type: none"> • Review the economic evaluations behind healthcare policies and guidelines • Critically evaluate economic evidence for clinical decision-making and intervention selection. • Advocate the importance of understanding health economics to improve clinical care.
Adult Learning Principles	<ul style="list-style-type: none"> • Enhance awareness and understanding of international trends in Medical Education • Increase awareness, knowledge and confidence on “what are” and “how to apply”, principles of adult learning, for better education learning experience
Behavioural Science and Educational Psychology	<ul style="list-style-type: none"> • Explain the importance of behaviour as a profound influence on human health • Describe the broad scope of evidence in behavioural science for models of behaviour and behaviour change • Apply knowledge of behaviour and behaviour change to solve problems relating to individuals' health and well-being and to provide access to appropriate resources, such as behaviour change interventions • Advocate and place a high value on behavioural sciences as a key body of evidence to help improve health outcomes in individuals, families, interdisciplinary healthcare teams, and communities • Develop effective strategies for advocating change in workplace and the healthcare system
Leadership	<ul style="list-style-type: none"> • Treating and managing patients with fragility fractures while coping with the COVID-19 crisis in members' clinical settings • Leading and supporting yourself and colleagues in a crisis situation • Demonstrating resilience in times of crisis and adopt strategies for managing stress with the unknown • Discuss the present impact of COVID-19 on delivery of care • Review the current status of clinical practice guidelines for fragility fracture • Discuss the role of new ASBMR guidelines for secondary fracture prevention • Translate complex science in the field of fragility fractures to support other healthcare professionals • Discuss the role of telemedicine from the perspective of patients and healthcare providers, and the keys to becoming an effective virtual educator and facilitator • Develop problem-solving skills to facilitate effective team leadership • Identify workable solutions to current challenges in the delivery of care
Technology Literacy	<ul style="list-style-type: none"> • Develop an awareness of current standards and policies, within your healthcare institution, on the use of healthcare technology. • Critically evaluate healthcare contexts in which the use and implementation of technology is appropriate. • Identify and resolve shortcomings in members' approach to technology in the workplace • Advocate the use of technology with patients and interprofessional healthcare (IPC) team members. • Apply leadership skills to help team members adapt to and solve problems related to technology in the workplace.

Analysis

Quantitative data from self-assessments (multiple choice questions) were compiled using Excel (Microsoft Corporation, Version 2015 for Office 365, 2021). Qualitative data were analysed thematically [25] using NVivo software (QSR International Pty Ltd, Version 12, 2018). To minimise self-reporting bias as well as single-observer and single-method bias, data sources, methods, and investigational perspectives were triangulated [26,27].

Results

A total of 18 junior specialists treating patients with fragility fractures (e.g. endocrinologists, internal medicine specialists, osteologists, rheumatologists), from six European countries (Denmark, France, Germany, Ireland, Spain, UK) and Brazil, participated in the CoP programme (Table 2). All of them were selected for their knowledge and behaviour, as emerging experts and future leaders in the field of bone health. Twenty-six (26) emerging experts originally registered to the CoP programme. Of the 26, 18 took part in at least one live activity, and will constitute our main group of CoP participants. Attrition was due to prior commitments, change in goals, or in work role or location and unrelated to the programme itself. Since this study aims to evaluate the CoP programme, sufficient participation is needed to generate rich data on the member experience. Responses to the nine post-activity self-assessments varied, from $n = 6$ to $n = 17$, which is reflective of the number of participants who attended each activity (between 7 and 8 for the webinars, between 11 and 21 for the live activities). In total there were 72 main posts on the forum (not including responses), and 226 views of all webinar recordings hosted on the website (an average of 20.5 views for each of the eight recorded webinars). Participants reported an impact of the programme on their clinical practice in terms of collaboration, communication, application of adult learning principles, understanding of health economics, leading team members, and behaviour change as well as benefits and challenges associated with the CoP. Quotes below are representative of

the qualitative analysis emerging themes. Additional quotes can be found in supplemental material A.

Impact on Clinical Practice

Following the interactive webinar on interprofessional collaboration in the first half of the programme, most participants who completed the online assessment (5 out of 7) indicated that the webinar would have a moderate impact on their leadership (Table 3). The 11 multiple-choice questions on interprofessional collaboration were correctly answered on average by 83% of participants (Table 4). Further into the programme, participants described improved communication and active listening skills with their clinical teams:

I have improved my skills through the course simply by being able to look at the challenges that they [other CoP members] have [...] and then trying to figure out how I can better explain why this is important or why it needs to be done and probably also better listen to folks ...

I have changed the way I behave during departmental meetings. I used to jump in with ideas or comments. I am now trying to actively listen to better appreciate others ...

They also described willingness to receive critical feedback and being open to express vulnerabilities when communicating with colleagues:

... the thing that I might change is to try and not be as afraid of not knowing everything. And showing my own vulnerabilities and my own mistakes or challenges."

Most participants who completed the online assessment after the webinar on health economics in the first half of the programme (5 out of 6) predicted the webinar would have a moderate impact on their leadership (Table 3). The 10 multiple-choice questions on health economics were correctly answered on average by 92% of participants (Table 4). In the second year of the programme, participants described improved negotiation skills and confidence in creating institutional changes:

Table 2. Participants description by speciality and country.

	Brazil	Denmark	France	Germany	Ireland	Spain	UK	Total
Geriatrician/ Stroke Physician				1	1			2
Endocrinologist		1		2		2		5
Internal Medicine Physician						1		1
Orthopaedic/ Osteologist				2				2
Rheumatologist	2		3			1	2	8
Total	2	1	3	5	1	4	2	18

Table 3. Anticipated impact of learnings from webinars, self-reported on a 3-point scale, with an open field a follow-up question asking participants to justify their response.

Question	No or little impact	Moderate impact	Strong impact
How much impact will the webinar on interprofessional collaboration have on your leadership and why? (Online assessment, n = 7)	n = 1 "This webinar helpfully focused on creating an awareness of interprofessional collaboration barriers but did not progress to facilitating better performance beyond that".	n = 5 "I already possess good communicational skills [...], but for sure it is also helpful to have this information presented in a systematic way".	n = 1 "I work as a team with a nurse or nursing assistant, medicine students, colleagues from other specialties [...] so for me it's important to learn skills about interprofessional collaboration".
How much impact will the webinar on health economics have on your leadership and why? (Online assessment, n = 6)	–	n = 5 "I have limited access to experts in health economics to help develop business cases/models so what I have learned will be of benefit to me with future projects"	n = 1 "In the (near) future I would like to implement an FLS in my hospital".
How much impact will the webinar on adult learning principles have on your leadership and why? (Online assessment, n = 17)	n = 1 "Lack of tools to implement changes".	n = 12 "I have started evaluating the efficacy of my learning activities".	n = 4 "I will be able to set objectives in my daily practice more properly with my team".
How much impact will the webinar on behavioural science and educational psychology have on your leadership and why? (Online assessment, n = 17)	n = 3 "I have experienced the webinar as very theoretical with little relevance to challenges in daily clinical life."	n = 11 "I think it will need a lot of practice to apply that knowledge to my leadership".	n = 3 "It reinforces the importance of explaining to my team the benefits behind the change and to get better results".

Table 4. Frequencies of correct/incorrect answers on multiple choice questions by theme.

Theme*	Correct answers	Incorrect answers
<i>Behavioural science and educational psychology (5 questions, n = 12)</i>	49	11
<i>Adult learning principles (2 questions, n = 12)</i>	17	7
<i>Interprofessional collaboration (11 questions, n = 7–8**)</i>	68	14
<i>Health economics (10 questions, n = 6)</i>	55	5
<i>Critical appraisal of guidelines (2 questions, n = 9)</i>	18	0

* Full list of questions available in supplementary material B.

** n = 8 for first 5 questions, n = 7 for the 6 remaining questions

... the benefit of what I got was probably when we worked on concrete examples. [...] like when we talked through a difficult scenario, which is how to convince the stakeholder that we need to set up a new metabolic bone clinic [...] we had a few ideas about what is actually important to point out ...

Following the webinar on adult learning principles, most participants who completed the online assessment (12 out of 17) predicted the webinar would have a moderate impact on their leadership (Table 3). The two questions on adult learning principles were correctly answered by 58% (identifying a clearly written learning objective) and 83% of participants (placing steps of the education process in ascending order). Participants described that their improved knowledge of adult learning principles had a direct effect on their ability, as educators, to better adapt their educational content to their audience:

I think the other topic on how to prepare lectures, to prepare courses, to think about what the learners need, and what the skill set is you want to focus on, and how you have to adapt your type of teaching also has really helped me in preparing lectures and other educational things with our students.

They also became more empowered to create educational changes in their institution:

... last semester we tried to do bedside teaching through lectures and you know that these people that are organizing these courses probably should be educated into these, the science behind it as well. [...] every time I was listening to these lectures, I was like 'Wow, this is against everything we learned in this course.' [...] So I'm really glad that we, at least here, have the opportunity to make up some of that.

Participants also developed competencies to critically appraise clinical guidelines. In the closing sessions, where the mentors had shared their expertise on the critical appraisal of various national guidelines in osteoporosis, all participants who completed the online assessment correctly answered the 2 questions on critical appraisal of guidelines (Table 4). Participants were also asked to describe their learning takeaways. One participant responded:

How to more appropriately assess the method by which these [guidelines] were developed and the rigour of this method, and skills to more critically assess the applicability to my patient cohort.

When participants were asked about what they were planning to apply in their work following the closing sessions another participant stated:

Critical appraisal of guidelines in the context of content and applicability at a national level, but also individual patient level.

After the webinar on behavioural science and educational psychology, most of participants who completed the online assessment (11 out of 17) predicted the webinar would have a moderate impact on their leadership (Table 3). Questions on behavioural science and educational psychology were correctly answered by 82% of participants (Table 4). Participants expressed growth in their leadership to identify complex causes of behaviour and to propose solutions in an engaging, collaborative manner:

We have some students that actually postpone things, thesis defenses, publications. But with the strategies that were learned during the program, I can now do better with this [...] We try to understand why someone is postponing the work that needs to be done and offering help and support to understand the real cause of that attitude, [...] understanding what's the main question to get the best solution possible.

Some also expressed more confidence in initiating steps for a FLS programme at their institution:

I'm quite junior in rheumatology in my hospital. So, after these two years in this program, I feel like more confident and I'm starting to apply some of the messages that I have learned because we are trying to start a FLS in my hospital. So this program was perfect in the time for me.

They were able to describe solutions brought forward in the programme when facing challenges, such as fear of change and inertia, when leading a team towards digital literacy:

The leadership must take the front line using and implementing the digital platform to give an example of what and how that can improve the performance of the whole team.

They also expressed confidence in coping with the challenge of leading their team through a crisis situation:

From what we have seen in the COVID pandemic I would especially focus on being able to withstand professional work overload and fatigue and rapidly adapt to the constantly changing challenges presented in crisis situations. [...] Perhaps the most important would be to listen to the opinions of team members and take into account the characters and necessities of each person [to] adapt to changing situations ...

Participants' Perspectives on the Programme

In the qualitative data collected throughout the programme, participants often shared that they perceived the programme as a naturalistic learning, sharing, and problem-solving experience:

... it's more stimulating and easier to learn, because you're doing it in a natural way. I mean, it's not because you have to do an exam that you are studying. It's because you're interested in a subject and other people, too, and you put in practice what you learn ...

After two years there was an expressed desire to extend the CoP due to the positive impact on their peer-to-peer learning and the bond created amongst the health-care professionals:

... it's taken us nearly the two years just to become really, really comfortable with each other. And I think that if we look at this as a vaccination program, then we need boosters and we're going to need boosters from each other over the next while.

There was a preference for an in-person, rather than online format, to develop trust between members, and especially since clinicians already spend much time on their computers.

... it's much easier to try to figure out what's the problem and to discuss about the problem and possible solutions or possible strategies, how to go about to solve this problem via person, in face-to-face meetings.

The online webinars were adjusted to be more interactive throughout the programme, which was appreciated considering the new reality of the pandemic:

I especially liked the webinars in which we talked about our personal experiences on COVID pandemic, and how different countries are different also specializations go about it. I think it was kind of also moral support for the time.

The interactivity included in the CoP was positively received as a complement to the programme between meetings and webinars. Some suggested the programme would be even more beneficial if the meetings were closer to each other in time:

... these last three [closing sessions] have been the best. I think that there's probably an advantage to putting them back-to-back in fact, because we are more familiar with each other every time we meet online, instead of having them three months apart.

In the first year of the programme, it was difficult for some members to get accustomed to the unique concept of a CoP and to relate to other members from different work environments:

... at the beginning it was quite a strange concept [...] it's not immediately that you can switch it, like you can switch on the TV and then everything starts to work. I think it is a progress in time [...] the last meeting [...] we could actually work as a group together to find solutions.

Others found the heterogeneity stimulating, especially further into the second year of the programme:

I think the main thing for me is that although we live in very different countries and have different scientific or specialist backgrounds, we have the same issues that we struggle with.

There was also an evolution of trust among participants throughout the programme:

I want to make the point that, for me, a [CoP], really is about trust. That you need to be able to trust the people in your practice, or in your community, to honestly talk about your challenges [...] without the live sessions, there would have not been any trust.

Discussion

Overall, the results from the evaluation of this CoP show participants benefited from the interaction with others and the naturalistic learning environment of the programme. Although there were a few challenges early in the programme, participants came to appreciate the unique format of the CoP as they became accustomed to it. Participants noted a transformation in leadership competencies, increased trust with other CoP members from various fragility fracture disciplines and countries, and a desire to prolong the programme. This corroborates with what was previously reported by Ranmuthugala et al. (2011) in their systematic review of the literature on CoPs: CoPs can help achieve collaborative success by “breaking down professional, geographical, and organisational barriers” [13].

CoP participants reported ease of collaboration with others. They described improved communication and active listening skills with their clinical teams, as well as more willingness to receive critical feedback and being more open to express vulnerabilities when communicating with colleagues. This ease of collaboration could translate into cohesive professional networks in healthcare, that enhance the coordination of patient care and protect healthcare professionals against potential burn-out [28]. As seen previously, CoPs can enhance professionals' sense of belonging [29].

CoP participants also reported a better understanding of health economics, improved negotiation skills and confidence in creating institutional changes. This improvement is crucial to help members develop post-

fracture care services (e.g. FLS programmes) at their respective institutions. It has been shown that interdisciplinary FLS programmes (such as those focused on endocrinology, geriatrics, and orthopaedic surgery) can be successful in increasing rates of post-fracture osteoporotic treatment [30]. Based on the results presented here, not only are the CoP participants likely to go forward in setting up FLS programmes themselves, but we believe they will be equipped with the right competencies to lead interdisciplinary teams. CoP participants expressed growth in their leadership, including an ability to identify complex causes of behaviour and propose solutions in an engaging, collaborative manner. Collective action has been identified as more effective than focusing on individual behavioural processes to facilitate behaviour changes in complex environments [31].

In terms of applying adult learning principles to their work setting, CoP participants described that improved knowledge of those principles has had a direct effect on their role as educators. Although healthcare professionals who have a role as educators have demonstrated clinical proficiency to be in that position, there is a need for them to also understand adult learning principles. The relatively low percentage of correct answers to the question about learning objectives highlight a gap that is remaining and could be addressed in a future program. This understanding will help them determine the appropriate educational methodologies and learning objectives for the specific type of audience and setting [32]. This is also true for the question about the Trans-Theoretical Model stages of change, another question for which a relatively low percentage of correct answers was observed.

Based on the results of this programme evaluation, we believe other healthcare professionals practicing in the field of fragility fractures could benefit from a formal interdisciplinary CoP. Although the programme had an initial formal structure, we learned that it was important that the structure remained flexible, especially since it spanned more than two years. Despite the challenges stemming from the COVID-19 pandemic, the programme was successful in maintaining the collaborative learning process and interactivity among members by substituting live sessions with online webinars. The webinars allowed virtual learning to be as effective as in-person, which corroborates with previously published literature [33]. However, as described by some of the members, we speculate that the in-person live sessions that took place pre-pandemic helped foster the trust necessary to build strong relationships.

Limitations

The total sample size was relatively small and not all members of the CoP completed all online assessments where the quantitative data was collected. However, the rich qualitative data collected throughout the programme from all participants demonstrated the overall impact of the programme. An unexpected limitation of this initiative was the COVID-19 pandemic which made it impossible to include the live sessions as originally planned.

Another limitation is that this programme was only offered to a limited number of bone specialists, with a possible selection bias. Therefore, this programme only represents the first, but important step on the way to improving leadership in the management of fragility fracture patients. The optimal management of fragility fractures patients is multidisciplinary and includes family physicians, nurses and allied healthcare practitioners. This programme targeted leadership competencies and was, for that reason, targeted at the specialist physicians most likely to have a leadership role. The multidisciplinary nature of fragility fracture management programmes should be examined closely in the development of future CoPs.

Conclusion

This CoP brought together future international leaders in fragility fractures over two and a half years. The evaluation of this audience-specific CoP programme showed signs of effectiveness in enhancing leadership competencies among specialists in the bone field for better care of fragility fracture patients. Evaluation data highlighted the positive impact on leadership competencies of the members and provided support for a new mentor-supported peer-to-peer learning experience, and to a lesser degree, also highlight a few remaining gaps that could be addressed in a future programme. The programme was adapted after COVID-19 to include webinars on leadership during times of crisis, resilience, facilitating interactivity, and improvement of trust and professional relationships between members towards overcoming logistical barriers associated with the pandemic.

The results presented here could guide the development of other communities of practice for physicians involved in the clinical management of fragility fractures or similar conditions requiring complex and multidisciplinary approaches to management. A larger educational initiative and/or study could address the challenges found in our small group within a larger audience. As the field is undergoing dramatic changes – with the

emergence of new treatment options and the growing importance of new delivery of care models (such as FLS programmes) – leadership in this field is key for these physicians. To become better leaders, they should be encouraged to train themselves in leadership competencies through different educational programmes. Future CoP programmes regarding fragility fractures may consider the inclusion of not only bone specialists, but also family doctors, nurses or allied health care practitioners involved in the care of such patients.

A CoP can be beneficial if it is customised for the specific real-world needs and relevant to the context of the members. Because of the long-term aspect of such programmes, instructional design and deployment should remain flexible so educators and designers may adapt the programme to address unperceived needs [34] in light of changes in the clinical field, evolving needs of the participants, or barriers created by a worldwide crisis, such as a pandemic.

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