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Feasibility and acceptability of a primary care mentoring programme for undergraduate students

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ABSTRACT

Mentoring plays a crucial role in increasing the attractiveness of primary care careers for medical students. Based on a literature review and structured group discussions, the authors developed a primary care mentoring platform centred on undergraduate medical students' needs. All second- to sixth-year students were invited to enrol into the programme by choosing a mentor from an online platform, which was pilot tested during one academic year (2021–2022) with 16 mentors. Fifteen mentees enrolled into the pilot programme. The evaluation assessed the procedures' feasibility as well as the student-centeredness and acceptability of the programme. Mentees completed a quantitative survey evaluating satisfaction and the mentoring relationship's personal and content aspects. Mentors' feedback was collected during focus groups discussing the programme's acceptability and practical aspects. Both mentees and mentors expressed high levels of satisfaction with the programme. Mentees rated their mentoring relationships highly across most aspects. Mentees' content-related needs included postgraduate training, meeting an inspiring person, work-life balance, and questions about running a private practice. Mentors described the programme as a rewarding experience. They enjoyed the flexible structure that allowed them to adapt to the mentees' individual needs. Maintaining the relationship was mostly the mentors' responsibility. Further structured guidance from the programme coordinators was identified as potentially beneficial for future implementation. The findings highlight the feasibility and the advantages of a flexible, student-centred mentoring programme. The programme attracted students interested in primary care from all levels of undergraduate education. Such programmes may contribute to fostering students' interest in primary care careers.

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Introduction

The most effective healthcare systems are those relying on primary care [1]. However, there is still a lack of primary care physicians (PCPs) in many countries. Exposure to primary care during undergraduate medical education is key to motivating students to take an orientation in this field [2,3]. Mentoring programmes have emerged as a supporting element to increase the attractiveness of primary care careers [4–6]. Although there is no uniform definition in the literature [7], mentoring has been described as 'a confidential relationship formed between two people with the intent of providing career guidance at various junctures of the mentee's professional development' [8]. This paper describes the development of a primary care-focused mentoring platform at the Faculty of Medicine in Geneva, Switzerland, and presents outcomes from a one-year feasibility study.

The idea of a primary care-specific mentoring platform for students emerged from our research and a previously developed conceptual framework of primary care career choice [9]. In line with this framework, we hypothesised that mentoring could foster the interest of students positive towards primary care and thus motivate them to pursue postgraduate training in this field. Also, some of our Institute's PCPs reported repeatedly being contacted by students for career-related advice. In the absence of a structured primary care-specific mentoring programme accessible to students of all levels, we believed that a mentoring platform could formalise these activities and make them more visible and, in the long term, contribute to our mission to make primary care a more attractive career choice.

Programme design

Our aim was to offer students a low-threshold access to PCPs available to support them in primary care career-related questions. As early and ongoing contact with PCPs is pivotal for the primary care career decisions [8], we wanted our programme to be accessible to all students

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Box 1: Description of context

Academic context: This programme was set within the Institute for Primary Care at the Faculty of Medicine at the University of Geneva, Switzerland. The undergraduate curriculum lasts six years: A pre-selection year (year 1), pre-clinical years with mostly problem-based teaching (years 2 and 3), a clinical curriculum with mostly hospital-based rotations (years 4 and 5), and a final elective clinical year (year 6) including one mandatory month in primary care. Graduates may freely choose their speciality for postgraduate training. At the undergraduate level, primary care is taught in the form of a longitudinal curriculum, including lectures in year 1, practical seminars in years 2 and 3, and clinical clerkships in year 2 (four half-days), year 4 (eight half-days) and year 6 (one month).

Primary care context: In Switzerland, there is no specific primary care specialisation such as general practice or family medicine. The primary care workforce is made up of physicians specialised in general internal medicine or paediatrics and working in private practice.

starting in year 2 of medical school (we excluded first-year students because the first year is a pre-selection year with a high failure rate) Box 1.

Programme development

The programme was developed through a stepwise process which are described in Table 1:

(1) Identification of elements related to the success of primary care mentoring programmes in the published literature. We searched PubMed using the keywords 'mentor', 'mentoring', 'primary care', and 'medical students' plus relevant synonyms; one author (PP) read relevant articles and extracted themes.
(2) Further exploration of these themes with medical students and future mentors. Students were recruited through our faculty's students' association. Potential PCP mentors were recruited from our Institute and the research team's personal contacts. Group discussions were led by PP (students) and SDL (physicians) and focused on identifying students' and mentors' needs. As the main goal was to reach group consensus, we used a method inspired by the nominal group technique, a structured process commonly used to achieve consensus [10].
(3) Programme design based on elements identified in the first two steps. We chose a student-centred approach, allowing students to choose their mentor on an online platform, and included formal as well as flexible elements in the programme. Students were asked to formally enrol once they had identified a mentor. Mentors and mentees were provided with a written guide with the aims of the project and suggestions about how to organise the mentoring relationship, but were free to organise themselves as they wished, including the frequency, length, format, and content of meetings.

Programme evaluation

As the pilot project aimed to test feasibility and acceptability, the evaluation focused on short-term outcomes. The programme was piloted during one academic year (2021–2022). We recruited 16 mentors with experience in teaching and/or supervising students from our Institute and the researchers' professional networks. The sample was purposefully balanced in terms of gender, speciality, and geographical location. Participation was voluntary without financial or other type of compensation.

Evaluation methods

The aim was to assess the procedures' feasibility, the degree to which the programme was centred on students' needs, and the acceptability for mentors and mentees. Data collected for the evaluation are summarised in Appendix 1. At enrolment, mentees completed a short survey collecting baseline data, projected career plans, and criteria for choosing their mentor. At the end of the pilot phase, all enrolled mentees and their mentors were invited to participate in the evaluation. Mentees completed a quantitative survey reporting their evaluation of personal and content aspects of the mentoring relationship, inspired by a mentorship evaluation instrument developed and validated in Germany (Munich Evaluation of Mentoring Questionnaire) [11] adapted to our context. We additionally included a measure of satisfaction with the programme and its flexible format. Quantitative results were analysed descriptively.

Two focus group discussions were held with mentors on a video-conferencing platform. Questions addressed acceptability and practical aspects of the programme. Themes were extracted from focus group discussions using a content analysis approach.

Results

Twelve mentors were contacted by a total of 18 students. Fifteen students enrolled by completing the initial survey, see Table 2. The mentor's speciality and clinical

Table 1. Stepwise approach to developing a primary care mentoring programme for medical students based on data collected from the literature and from structured group discussions with students and potential mentors.

Step 1: Identification of relevant themes in the literature	Step 2: Exploration and refinement of themes in structured group discussions with students and future mentors		Step 3: Development of main elements of the mentoring programme
	Findings from discussion with nine students	Findings from discussion with six potential mentors	
Mentoring relationship			
Initiation of relationship between mentee and mentor	• Mentees should choose their mentor (ideally on an online platform presenting mentors' profiles) • Choice should be made based on compatibility of interests, overall lifestyle, and life goals • Important to clarify each other's expectations from the start • Trust is important	• Mentees should choose their mentor based on their interests and needs • Platform should focus on mentors' professional information; personal information should be provided on a voluntary basis. This information should only be accessible to students (not publicly available).	• Development of an online mentoring platform, presenting the profiles of available mentors (professional background, speciality, clinical and other activities, personal interests if desired). • Students from 2nd to 6th year were informed about the programme by email and through the students' association. Participation was voluntary and free of charge. • The first contact was established by the student through email, followed by a first encounter and formal enrolment in the programme.
Content of mentoring	• Mentors can assist their mentees by sharing their daily professional practice/life	• Support mentees in planning their training and, more generally, their career • Mentors should share their experience on the interface between professional and private life, as well as their experience about the 'real life' of a primary care physician	• A written mentorship guide was provided to mentors and mentees
Mentoring process			
Organisation and structure	• Preference for planned regular meetings • Preference for mostly one-to-one meetings, but small group meetings may be appropriate to discuss certain topics • Collective events may help create a feeling of belonging to the programme • Mentees should have the option to have more than one mentor (e.g. to answer different questions)	• Preference for a long-term relationship • Mentor should also be available to answer questions 'of the moment' • Preference for a more informal rather than a formal relationship • Mentors may have more than one mentee, and mentees may have more than one mentor • Preferable to agree on the number and/or frequency of meetings in advance • Preference for one-to-one mentoring, but meetings in small groups may be considered • Flexibility is important regarding organisation and structure	• Mentor and mentee were free to organise their relationship (in terms of number and frequency of meetings, meeting format, topics discussed) without interference by the programme coordinator. • For the pilot programme, a duration of one academic year was established in advance, although participants were free to pursue the mentoring relationship after the end of the pilot phase if desired.
Maintaining relationship		• Mentors should take the initiative to contact mentees but should be available for mentees whenever questions arise.	• No specific guidance was provided for the pilot phase, as this was part of the evaluation.
Mentors and mentees			
Mentor's role/ attributes of a good mentor	• Mentors should be passionate, empathic, good listeners, encouraging, motivating, reassuring, adapt to mentees' needs • They should mainly take on the role of a counsellor • Mentors should give non-judgemental and non-directive advice • The programme should provide a guide on 'How to be a good mentor'	• Mentors should take on the role of a counsellor and role model • A mentor is a person of reference that the mentee can approach whenever needed and who makes time for the mentee • Mentors should be passionate about their profession and willing to transmit their interest in primary care practice • Mentors should adapt to mentee's needs and create a setting of trust in which mentees feel comfortable	• The written mentorship guide included suggestions about successful mentoring relationships.
Mentee's role/ attributes of a good mentee	• A good mentee is respectful of mentor's time • Mentees should prepare for meetings (e.g. prepare questions or topics to discuss) and be clear about their own expectations • The programme should provide a guide on 'How to be a good mentee'	• Mentors would like to mentor students who have at least some interests in primary care	

(*Continued*)

Table 1. (Continued).

Step 1: Identification of relevant themes in the literature	Step 2: Exploration and refinement of themes in structured group discussions with students and future mentors		Step 3: Development of main elements of the mentoring programme
	Findings from discussion with nine students	Findings from discussion with six potential mentors	
Benefits for mentors[a]		• Mentoring should be seen as a gratifying experience based on altruistic motives, not financial compensation • Mentors may learn from mentees (e.g. about current undergraduate training, through their external point of view), which may stimulate their practice and give them new ideas	• Mentors were informed from the beginning that their participation was voluntary and not financially remunerated.

[a]This theme only emerged in the group discussion with future mentors.

activity were the most important characteristics for the mentees' choice of a mentor and are displayed in Table 3.

Mentees' evaluation

Eleven mentees answered the evaluation questionnaire – see Table 4. All indicated being satisfied or very satisfied with the programme overall and with its flexible structure. They rated their mentoring relationships highly on all personal aspects, with mean ratings varying from 4.4 ('the mentor shared his/her passion for his/her profession') to 5.0 ('I felt safe'). Six mentees had met their mentor once: two of these conversations took place on the telephone, the others were in-person meetings. The five other students had been in contact with their mentor at least three times in a combination of in-person, telephone, and email contact. Regarding the content discussed during meetings, mentees' most frequent needs and expectations were related to postgraduate training, meeting an inspiring person, work-life balance, and questions about running a private practice. Satisfaction was high on most of these areas of interest.

Table 2. Description of mentees enrolled in the pilot project (total $N = 15$).

	N
Gender:	
(1) Female	10
(1) Male	5
Same gender as mentor:	
(1) Both female	7
(1) Both male	3
(1) Mixed	5
Study year:	
(1) 2	2
(1) 3	3
(1) 4	2
(1) 5	3
(1) 6	5
Career plans:	
(1) Primary care (general internal medicine or paediatrics)	8
(1) Primary care, but also considering other options	4
(1) Undecided	3

Mentors' evaluation

Seven mentors participated in a focus group discussion (three additional mentors provided written feedback). They were overall very satisfied with the programme and stressed that contributing to mentees' career guidance was a source of personal fulfilment. They appreciated the flexible structure, allowing them to adapt to their mentees' needs as they arose. They recognised their responsibility of maintaining the relationship, as mentees would often be reluctant to 'bother' them, but also mentioned sometimes being unsure about when to actively contact their mentee. They suggested that some guidance might be useful, such as a guide detailing their role, practical tips about keeping contact with mentees, or a guide to help mentees define their questions and needs.

Discussion

Our study confirmed the feasibility and acceptability of a primary care mentoring platform targeting undergraduate medical students. Participating students reported high satisfaction with the programme overall and with the support they received from mentors. Mentors described their experience as rewarding. Although the flexible approach – letting the mentor-mentee pairs organise themselves as needed – was highly appreciated, participants suggested that more structured guidance might be helpful.

Our findings resonate with those from a study on mentoring relationships conducted in Germany, which is a comparable context to ours [12]. Mentors and mentees were also free to organise themselves with

Table 3. Importance of mentor's characteristics for mentees' choice of mentor.

	Importance of characteristic for mentees (N; total = 15)		
Mentors' characteristics	Not important	Moderately important	Very important
Age	11	4	0
Gender	11	4	0
Specialty (i.e. internal medicine or paediatrics)	1	3	11
Practice site	5	6	4
Clinical activity	0	6	9
Academic activity	2	7	6
Other activity	3	10	2
Personal factors	4	8	3

Table 4. Evaluation of content aspects of the mentoring relationship by mentees (N = 11).

Areas of interest:	N (mentees who selected area of interest)	Mentees who were satisfied or very satisfied with mentor's support regarding area of interest (N)
Advice about postgraduate training programme	11	11
Information about postgraduate training	10	10
Meeting an inspiring person	10	9
Advice on work-life balance	9	8
Better knowledge about running a private practice	9	5
Discover the profession and daily work of a primary care physician	6	6
Benefit from mentor's professional network	6	3
Advice about choosing a speciality	5	4
Advice about choosing clerkships	2	2

Mentees were presented a list of areas of interest and asked to pick those that were relevant for them in their mentoring relationship. They were then asked to indicate their level of satisfaction with the support they experienced for each area. Satisfaction items were rated on a scale from −3 (very unsatisfied) to +3 (very satisfied).

Table 5. Checking the primary care mentoring programme against characteristics of successful formal mentoring programmes.

Criteria for successful mentoring (adapted from [13])	Meeting of criteria by our programme
Mentor and mentee participation is voluntary.	Yes
The process of mentor-mentee matching does not limit the development of informal relationships. For example, a mentor pool can be established to allow mentees to choose from a variety of qualified mentors.	Yes
Mentors are chosen on the basis of their past record in developing mentees, their willingness to serve as a mentor, and evidence of positive mentoring skills.	Yes
The purpose of the programme is clearly understood.	Unclear (this element was not addressed in the evaluation)
The length of the programme is specified. Mentor and mentee are encouraged to pursue the relationship beyond the formal time period.	Yes (the length of the pilot phase was limited to one year)
A minimum level of contact between mentor and mentee is specified.	No
Mentees are encouraged to contact each other to discuss problems and share successes.	No
The mentor programme is evaluated.	Yes
Mentoring is rewarded, signalling that it is worth the time and effort.	No (in the pilot phase, mentors were not rewarded on purpose as this was to be addressed in the evaluation)

minimal guidance, and the authors found that mentoring relationships differed in intensity and content according to students' individual needs. Although the benefits of the programme were highly valued by participants, they also expressed the need for more guidance. This suggests that a key challenge of implementing such mentoring programmes may be to find the right balance between openness and structure in terms of organisation.

Traditionally, mentorship in academic medicine is often focused on students' academic goals and scientific achievements. In contrast, primary care mentoring programmes include both community-based and academic PCPs with a wider spectrum of potential topics to be addressed. Thus, it is paramount to determine students' needs when developing such programmes. The authors of a Canadian study [8] categorised students' mentoring needs into practice, system, and

personal levels, which are in line with our participants' answers presented in Table 5. However, in our study, training-related needs were the most important, probably reflecting students' short-term needs. The findings of this study also highlight the importance of a flexible approach, allowing for evolving and adaptive relationships, whereas narrowly delineated roles and prescriptive guidance could limit this evolutionary and fluid nature of mentoring. A flexible approach creates space for a variety of relationships from informal to formal and from short-term to long-term [14] and for varying forms of mentoring, such as micro-mentoring or coaching approaches [15].

Finally, previous research suggests that letting students choose a mentor seems to be key for success, which could be related to the role modelling aspect of mentoring [8,16]. Students identify role models when they perceive them as sharing similarities or representing an aspect of what they would like to become [17], underlining the importance of offering a large palette of mentors with different professional interests.

General criteria for successful mentoring programmes have been described in the literature [13]. Although our programme met many of these criteria (Table 5), elements to improve include specifying a minimum level of contact between mentor and mentee and encouraging contacts between mentees to stimulate discussion. Also, rewarding mentors for their time and effort needs to be discussed. Mentors in our study were clearly against receiving financial rewards, but non-monetary compensations might be considered to motivate PCPs to participate in such a programme, such as library access or continuing education credits.

Implications

Beyond our findings' local implications, our study highlights elements that may guide mentoring efforts in other contexts. We strongly recommend letting students choose their own mentor. In our study, some mentors chose to disclose personal and professional information, allowing students to choose a mentor that they perceived as most likely to answer their needs and questions. This approach has the additional benefit of showcasing the breadth of primary care. We advise to keep the programme structure flexible, allowing mentors to adapt to individual mentees' needs and supporting the development of a relationship based on trust [12]. However, structured guidance seems important for some mentors [7]. As mentors carry the responsibility for maintaining the relationship, some might benefit from guidance about when and how to reach out to their mentee [12] or about the content of mentoring conversations with students [18]. Guidance on setting goals for the mentorship could include prompting questions to help mentors structure mentoring sessions and support mentees' active engagement [19].

Strengths and limitations

This was a pilot project in a single location, thus limiting the findings' generalisability. However, the evaluation confirmed the feasibility and acceptability of our programme, and our findings resonate with published literature. We relied on the literature and a conceptual framework of primary care career choice to develop our programme, refined by a structured needs assessment of mentors and mentees. The study is further limited by its short timeframe, which only allowed for the evaluation of short-term feasibility outcomes. We deliberately did not study changes in students' career choices as such short-term changes are unlikely to be relevant in the longitudinal career choice process [20,21]. Long-term outcomes will have to be followed up once the programme has been implemented on a larger and longer-term scale.

Conclusions

This one-year pilot phase of a mentoring programme in primary care highlighted the feasibility and the advantages of a flexible mentoring relationship, based on a student-centred approach. The PCPs valued the time spent with mentees and the support they were able to provide. The programme attracted students interested in primary care from all levels of undergraduate education. We are confident that it may contribute to retain such students in primary care careers in the future.

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Ethical approval

In accordance with applicable law in Switzerland (article 2 of the Human Research Act), formal ethical approval was not required for this study. Participants were informed of the study aim and participation was voluntary. Survey data were kept confidential: mentees' answers were not transmitted to mentors even in anonymised form because of the small number of participants.

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Appendix 1: Overview of data collected for the evaluation of the pilot phase of the mentoring programme

	Data collected from mentees	Data collected from mentors
Beginning of mentoring programme	Written survey: (1) Demographic information: gender, study year (2) Importance of mentors' characteristics for their choice of a mentor (age, gender, speciality, practice site, clinical activity, academic activity, other activity, personal factors), rated on a 3-point scale (not important – moderately important – very important) (3) Projected career plans (free-text answer)	Data provided on mentor's profile: Gender, speciality (general internal medicine or paediatrics)[a]
End of mentoring programme	Written survey: (1) Evaluation of personal aspects of the mentoring relationship (attributes of mentor), each rated on a scale from 0 (= strongly disagree) to 5 (= strongly agree): (2) The mentor was easy to contact and meet (3) The mentor answered my questions satisfactorily (4) The mentor was attentive and empathetic (5) The mentor was encouraging and supportive (6) The mentor provided advice and guidance (7) The mentor motivated me (8) The mentor shared his/her passion for his/her profession (9) I felt safe (10) Evaluation of content aspects of the mentoring relationship: Mentees were asked to choose their areas of interest related to mentoring from a list (see Table 5) and then to rate their satisfaction with the support received from the mentor for each area on a scale from −3 (very unsatisfied) to +3 (very satisfied) (11) Satisfaction with the flexible format and overall satisfaction with the programme were assessed on a scale from −3 (very unsatisfied) to +3 (very satisfied)	Focus group discussions structured around the following leading questions: (1) What was your experience of being a mentor? (2) What were your mentee's needs? (3) How would you describe the relationship with your mentee? (4) If this programme were to be implemented on a larger scale, how should it be?

[a]Further information was collected from mentors to complete their profiles on the platform (see Table 1). However, this information was not used for the evaluation of the pilot phase.