Mentorship in Medical Residency in Orthopedics: Evaluation of a Program by Mentors and Mentees

Mentoria na residência médica em Ortopedia: Avaliação de um programa por mentores e mentorados

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Abstract

Objective To demonstrate the degree of recommendation of mentors and mentees regarding a mentorship program, to assess the degree of satisfaction of the participants, and to describes the main characteristics of the meetings in pairs.

Materials and Methods A primary, retrospective, analytical study based on answers to the annual evaluation questionnaires of the institutional mentorship program in pairs of the Orthopedics and Traumatology residency from December 2017 to February 2021.

Results We compiled 52 responses from 26 mentorship preceptors and 26 mentored residents. The mentees and mentors had average ages of 27 (±1.5) years and 45 (±8.2) years respectively. A total of 96% of the participants recommend the program, and 89% of the mentees reported that the mentors contributed to their personal and professional decision-making process.

Conclusion The mentorship program proved to be a highly recommended strategy in medical residency in Orthopedics. Data show that mentors contributed to the mentees' personal and professional decision-making process.

Keywords
- medical residencies
- mentoring
- orthopedics/education
- traumatology/education

Resumo

Objetivo Demonstrar o grau de recomendação de mentores e mentorados quanto à participação em um programa de mentoria, avaliar o grau de satisfação dos participantes, e descrever as principais características das reuniões em dupla.

Materiais e Métodos Estudo primário, retrospectivo, analítico, com análise das respostas dos questionários de avaliação anual do programa de mentoria em dupla da residência de Ortopedia e Traumatologia da instituição de dezembro de 2017 a fevereiro de 2021.

Resultados Foram obtidas 52 respostas de 26 preceptores mentores e 26 residentes mentorados. A média de idade dos mentorados foi de 27 anos (±1,5 ano), ao passo que

Palavras-chave
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- ortopedia/educação
- traumatologia/educação

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a média de idade dos mentores foi de 45 anos (±8,2 anos). O grau de recomendação do programa pelos participantes foi de 96%, e 89% dos mentorados consideraram que os mentores contribuíram para a tomada de decisões pessoais e profissionais.

Conclusão O programa de mentoria se mostrou uma estratégia com alto grau de recomendação na residência médica em Ortopedia. Os dados mostram que os mentores contribuíram para a tomada de decisões pessoais e profissionais dos mentorados.

Introduction

Mentorship is a relationship in which the more experienced assists the growth and development of those less experienced.[1,2] The term mentoring refers to ancient Greece: in Homer's *Odyssey*, the hero Odysseus left his son Telemachus under the care of his friend Mentor before sailing for the Trojan war.[3] In medical residency, preceptors, acting as mentors, can be decisive in the provision of guidance to residents, seen as mentees, both in terms of professional and personal issues, helping them become specialized physicians.[4,5] An informal mentorship is an unplanned approach, often driven by affinity. According to Cohen et al.,[6] the success of a mentorship relies on a good relationship between the parties to ensure an exchange of experiences, as it generates mutual benefits.

Formal mentorship, a structured cycle of meetings with predetermined objectives, is a widely-used tool in people management for talent development.[6] Although it is an infrequent practice at medical residency programs (MRPs),[7] it has been successfully described in the syllabi of certain surgery specialties.[8–10] A study by the American Academy of Orthopedic Surgeons (AAOS) with orthopedic MRP participants showed that only 26% of those evaluated were formally enrolled in a mentorship program; however, 95% believed that mentorship should be part of MRPs.[10]

In 2017, we introduced the mentorship program in pairs in the syllabus of the Orthopedics and Traumatology MRP to approximate preceptors and residents, promote an exchange of experiences between them, and aid residents in their professional and personal development. The primary objective of the present study is to demonstrate the degree of recommendation of the mentorship by mentors and mentees; our second goal is to assess the degree of participant satisfaction and describe the main characteristics of the meetings in pairs. The authors hypothesize that participants highly recommend mentorship.

Materials and Methods

We wrote the present manuscript according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement. It is a primary, retrospective, analytical study approved by the institutional Ethics in Research Committee (under CAAE 40196220.4.0000.5133). We compiled the answers to the annual evaluation questionnaires on the mentorship program of the Orthopedics and Traumatology Residency received from December 2017 to February 2021. Participation in the institutional MRP mentorship program is voluntary for preceptors and residents. Each year, a resident chooses a preceptor, and they hold monthly meetings (pair model) to discuss topics relevant to orthopedists. After the annual mentorship cycle, participants answer a questionnaire to assess their satisfaction with the program, the mentor/mentee's contribution to life decisions, opportunities for professional networking, educational support, personal growth during the period, and the degree of recommendation of the program, which is the primary outcome of the present study.[10] The answers are scored from 1 to 5 to evaluate the influence and the degree of recommendation of the program regarding the aforementioned aspects, with 1 corresponding to no influence/recommendation, and 5 indicating strong influence/recommendation. In addition, we have analyzed the location of the meeting, the person in charge of choosing it, the number of encounters, the reasons for not holding them, and the most discussed topics. The analysis was performed after the participants signed the informed consent form. There was no previous sample size calculation since the total number of research participants corresponds to the number of participants in the mentorship program from 2017 to 2021.

The descriptive analysis consisted of absolute (n) and relative (%) frequencies for the qualitative variables, and averages and standard deviations for the quantitative variables; it also included the 95% confidence interval (95%CI) for mean values. The Wilcoxon test determined the differences between mentees and mentors regarding qualitative and quantitative indicators. The Spearman correlation was used to test the relationship among the variables. We performed the analyses with the Statistical Package for the Social Sciences (IBM SPSS Statistics for Windows, IBM Corp., Armonk, NY, United States) software, version 20.0. Statistical significance was set at $p < 0.05$.

Results

We compiled 52 responses from 26 mentees and 26 mentors. The average ages of mentees and mentors were 27 (±1.5) years and 45 (±8.2) years, ranging from 24 to 30 years and 35 to 60 years respectively. Most mentees and mentors reported four to six weekly meetings, usually at a bar or restaurant; the main topics addressed in these meetings were the job

Table 1 Characteristics of mentee-mentor meetings

Subjects	Mentees 26 (%)	Mentors 26 (%)
Number of weekly meetings		
1 to 3	(23.1%)	(23.1%)
4 to 6	(38.5%)	(42.5%)
7 to 9	(34.6%)	(23.1%)
10 to 12	(3.8%)	(11.5%)
Location of meetings		
Restaurant/bar	(65.4%)	(73.1%)
Hospital	(34.6%)	(30.8%)
Mentor's home	(30.8%)	(30.8%)
Mentee's home	(11.5%)	(7.7%)
Meeting subject		
Difficulties in the professional life as an orthopedist	16 (61.5%)	18 (69.2%)
Choices/issues during residency	12 (46.2%)	18 (69.2%)
Mentee's personal problems	2 (7.7%)	5 (19.2%)
Professional choices of the mentor as an orthopedist	11 (42.3%)	13 (50.0%)
Personal choices of the mentor as an orthopedist	5 (19.2%)	6 (23.1%)
Future choices of the mentee (R4)	9 (34.6%)	14 (53.8%)
Politics	5 (19.2%)	6 (23.1%)
Physician burnout	3 (11.5%)	4 (15.4%)
Job market	17 (65.4%)	18 (69.2%)

market, difficulties in the professional life as an orthopedist, and choices/issues during residency (►**Table 1**). The most common reason for not holding a meeting was lack of available time on their schedules either by the mentee (61.5%) or the mentor (73.1%).

The analysis of the qualitative indicators of the mentorship program revealed no significant differences in the degree of recommendation by mentees or mentors ($Z = -0.333$; $p = 0.74$). In total, 96% of the participants recommend the mentorship program, and approximately 70% of mentees and mentors strongly recommend it (►**Figure 1**). There was no relationship between the degree of recommendation by the mentee and the mentor's age (r=0.03; p=0.90; n=26). On the other hand, the mentee's satisfaction with the mentorship program showed a positive relationship with their age ($r = 0.36$; $p = 0.07$; $n = 26$), suggesting that the degree of satisfaction increases with age, but with no statistical significance.

Most residents (62%) reported being strongly satisfied with the program, compared to 48% of preceptors. However, from a statistical point of view, there was no significant difference in the degree of satisfaction of mentees and mentors with the program ($Z = -1.097$; $p = 0.27$) (►**Figure 2**).

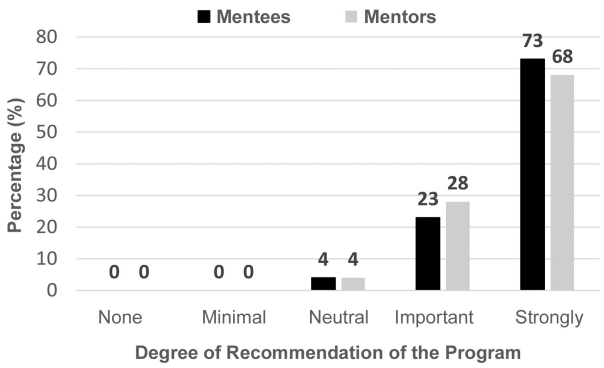

Fig. 1 Degree of recommendation of the mentorship program by mentees ($n = 26$) and mentors ($n = 26$).

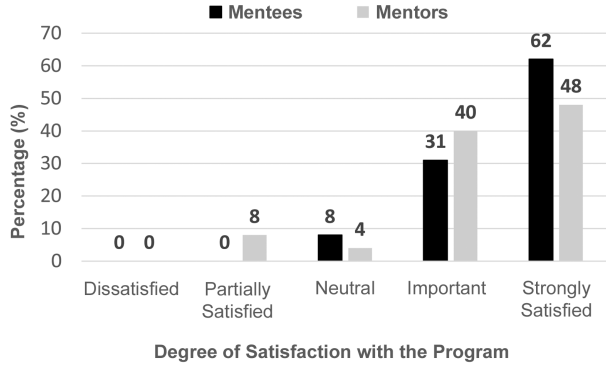

Fig. 2 Degree of satisfaction of mentees ($n = 26$) and mentors ($n = 26$) with the mentorship program.

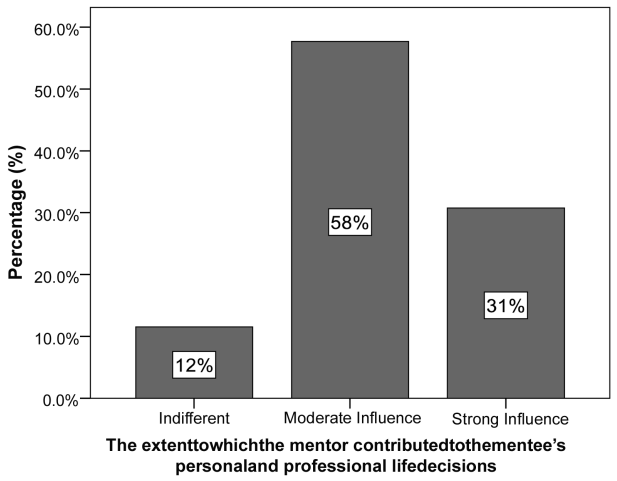

Fig. 3 The extent to which the mentor contributed to the mentee's personal and professional life decisions ($n = 26$).

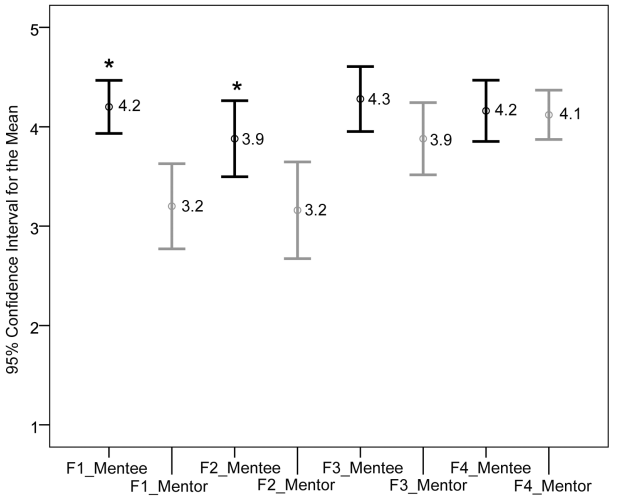

Fig. 4 Importance of the mentorship program according to mentees (black bars) and mentors (grey bars). Captions: F1: To what extent has your mentor/mentee contributed to your life decisions (professional, personal, or both)? F2: To what extent has your mentor/mentee provided you with professional networking opportunities (work, specialization, fellowship, research)? F3: To what extent did your mentor/mentee offer you educational support (to study theory, practice, surgery, research)? F4: To what extent has your participation in the mentorship program contributed to your personal growth? Note: *Statistically significant difference ($p < 0.05$) between mentees and mentors.

Most mentees reported that their mentors partially influenced their personal and professional life choices, with 3 out of 10 saying this influence was significant (►**Figure 3**).

Mentees attributed higher scores compared to mentors (►**Figure 4**) regarding the influence of the latter in their life choices (4.2 versus 3.2 respectively; $p < 0.001$) and the offer of professional networking opportunities (3.9 versus 3.2 respectively; $p = 0.009$). There were no statistically significant differences between mentees and mentors in terms of educational support ($p = 0.06$) and personal growth throughout the program ($p = 0.82$).

Discussion

The analysis of the results confirmed the authors' hypothesis of a high degree of recommendation of the mentoring program by mentors and mentees. In total, 96% of the participants recommended the program, and approximately 70% indicated it strongly. This finding agrees with data in the literature: Flint et al.[10] reported that 95% of resident physicians recommended mentorship during medical residency.

Other studies evaluated the residents' satisfaction with formal mentorship: data from the Department of Otolaryngology and Head and Neck Surgery at the University of Alberta in Canada revealed a satisfaction level with the program of 90%.[11] In addition, 17% of orthopedic residents in a formal mentorship program reported extreme satisfaction, while 28% were somewhat satisfied. The authors[11] explain that the low level of satisfaction is due to the methodology of assigning mentors to residents, instead of letting the residents choose their mentors. In our study, residents chose their mentors and reported a high degree of satisfaction, with 62% stating they were strongly satisfied, and 31%, significantly satisfied with their participation in the program.

An effective mentor is an experienced person with great empathy who guides their apprentice in the development of their ideas and in their personal and professional growth.[12] Medical mentees expect to obtain guidance on career choices and the job market.[13] Consistent with the AAOS study,[10] 89% of residents said that their mentors contributed to decisions in their personal or professional lives. Another study on mentorship revealed that 75% of general surgery residents reported the influence of mentors in their choice of specialization.

The mentee's interest in the mentors' experience and the search for guidance is evident when we analyze the most discussed topics during the meetings, such as issues regarding professional life and medical residency, the job market, and future professional choices. Data analysis showed that, according to the perception of the participants, the median number of encounters ranged from four to six, which confirms the possibility of implementing and maintaining mentorship in an Orthopedics and Traumatology MRP.

The present study has limitations. The answers were taken from a single program, which reduces the external validation of the method; in addition, the small sample size can lead to an overestimation of the outcomes. Further studies could analyze the same mentorship outcomes in other MRPs, along with differences in mentorship models (such as in pairs or groups). The authors believe that the dissemination of mentorship programs in Orthopedic MPRs greatly favors the professional training of future specialists.

Conclusion

In total, 96% of the participants recommended the mentorship program. Data showed that meetings in pairs were feasible, and 89% of mentees said mentors contributed to their personal and professional decisions.

Conflict of Interests
The authors have no conflict of interests to declare.

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