

Title page

1. Article title: Factors influencing mentors' satisfaction: A study from medical schools in Norway and Canada

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Abstract

Phenomenon: The mentoring of undergraduate medical students has been shown to benefit the mentors; however, detailed information on the factors that influence the satisfaction and motivation of mentors remains unclear. Such knowledge can be useful in sustaining group mentorship programs. The aim of this study was to investigate the experiences and perspectives of mentors to ascertain the factors that contribute to satisfaction and motivation.

Approach: As part of a larger research project, a survey was sent out to mentors at UiT the Arctic University of Norway, the University of Bergen and McGill University (N=461). Descriptive statistics, linear regression and factor analyses were used to examine the data in order to map factors associated with mentor satisfaction.

Findings: The overall response rate was 59% (n=272/461). Mentors reported a high mean satisfaction score of 4.55 (± 0.04 , median 5.00) on a five-point Likert scale. Six out of nine statements describing how mentors approach group mentoring were strongly correlated with each other. Through factor analysis of the items, we found a dominating factor labeled “Student-centered mentoring approach” which was strongly associated with the level of satisfaction as a mentor. Additionally, highly satisfied mentors took a greater interest in patient-centered medicine and their students’ personal development. Their groups spent more time discussing students’ clinical experiences, societal poverty and health, and patients’ suffering and sickness.

Insights: Our findings suggest that high mentor satisfaction, which is important for the pedagogical quality and sustainability of mentor programs, is related to the mentors’ student-centeredness and their interest in topics concerning professionalism. By preparing mentors for their roles and supporting them in developing strategies for establishing good mentoring relationships, the outcomes of group mentoring may be improved both for mentors and students. Interest in students’ personal development and the mentors’ own professional development seem to be indicators of mentors’ satisfaction and should be encouraged in mentorship programs.

Introduction

Mentoring medical students in a group setting may offer rich opportunities for relationship building and for the promotion of reflection by both students and mentors. These outcomes are favored through the nurturing of shared goals and in contexts where peers and mentors have diverse backgrounds and experiences.¹ By communicating and reflecting upon professional challenges in medical education, students can enhance the development of their professional identities essential to their future roles as physicians.^{2,3} Several studies assessing group mentorship programs have found that students report positive effects, e.g. increased personal support,^{1,4-6} professional growth and improved satisfaction with the medical education experience.^{1,4,7}

Group mentoring has been shown to benefit mentors as well, contributing to their professional development, enhancing personal satisfaction^{3,6,8-10} and honing clinical skills such as listening and communication.¹¹ A longitudinal case study of a group mentorship program for medical students demonstrated that mentors in well-functioning groups found the experience to be rewarding and validating, personally and professionally: “They were often effusive in their enthusiasm, describing their experience with words having the prefix “re”: reinforce, rediscover, re-anchor, and re-energize”.⁶ One of the key impediments to the establishment of well-functioning mentorship groups is doubt and uncertainty on the part of the mentors regarding the nature and goals of their role.¹²

Mentors are often clinicians or medical teachers who adopt the mentor role with minimal preparation or training in mentoring and facilitation of group processes.³ Ramani et al. highlighted a need to support mentors by defining clearly the expectations of mentoring tasks. They suggest 12 tips for effective mentoring; first on their list is to assist mentors in developing listening and feedback skills.¹³ How mentors’ function depends on a number of factors, such as personal rewards, individual motivation, the amount and quality of administrative support and access to structured faculty development. However, the relative importance of these items is not well known.¹⁴ A study by Stenfors-Hayes et al. identified three ways that mentors may interpret their role: as someone who can answer questions and give advice; someone who shares what it means to be a doctor; or someone who listens and stimulates reflection. Mentors who were focused on the first of these categories reported less gratification from mentoring.¹⁵

A well-established theory on motivation, the Self-Determination Theory (SDT) describes three psychological needs that motivate individuals to initiate behavior: the need for competence, autonomy and social relations/relatedness. The most self-determined type of behavior is spurred by “intrinsic motivation”; that is, when one initiates an activity because it is satisfying and interesting in itself, and not because of some external reward or punishment (“extrinsic motivation”).¹⁶ In intrinsic motivation, one is driven by pleasure, interest and the satisfaction inherent to the activity. We contend that supporting mentors’ autonomy, competence and social integration may lead to higher levels of satisfaction and hence increase intrinsic motivation, in a self-reinforcing spiral.

There is a knowledge gap with respect to factors influencing group mentors’ satisfaction and motivation, and a dearth of data delineating the optimal preparation and support of mentors. The aim of this study was to investigate the experiences and perspectives of mentors to ascertain the factors that contribute to satisfaction and motivation.

Methods

Context

The present study is part of a larger research program (called CanNorMent) which explores various aspects of physician-mentors’ experiences. The CanNorMent study is a collaborative investigation at three medical schools: UiT The Arctic University of Norway, the University of Bergen, Norway and McGill University, Canada. The structures of the mentoring programs at the three schools are highly similar. They are all longitudinal and compulsory group mentorships facilitated by mentorship pairs, focusing on establishing a safe environment where students, in dialogue with peers and mentors, can: (1) share thoughts and discuss the challenging experiences and identity-changing processes of medical studies, and (2) reflect on patient encounters and the goals of medicine. Further details on the programs are presented in Table 1.

Survey instrument

Inspired by Stenfors’ research¹⁵ and Prosser and Trigwells’ approaches to teaching inventory adapted to mentoring¹⁷, we developed a questionnaire using a combination of closed (n=28) and open-ended questions (n=8). For further details regarding the survey sections and items, see Appendix 1. Most closed items are ranked on a five-point Likert scale. Free text answers were allowed for questions regarding the number of years of mentoring,

comments on the mentoring experience, rewarding aspects, importance of topics, suggestions for mentor training and experiences of co-mentoring. At the time of this study, the mentor-pairs at the University of Tromsø and Bergen were both physicians, whereas mentors at McGill University had a senior medical student as co-mentor. Consequently, questions regarding co-mentorship were different in the Norwegian and Canadian surveys.

Participants and data analysis

All physicians who had participated as mentors in each of the three mentorship programs (graduation years 2013-2020, n=461) were invited to participate. The study population at each site was as follows: 114 mentors at UiT the Arctic University of Norway; 123 at the University of Bergen; and 224 at McGill University. There were no exclusion criteria. The study was approved by the Institutional Review Board at McGill University (Study Number A03-B16-17B) and the Norwegian Centre for Research Data (ID 53715) in March and May of 2017, respectively.

The survey was distributed by e-mail to the mentors in June 2017 using the platform SurveyXact, with two reminders. Responses were stored on the university's high-security server where all analyses were carried out on encrypted files, with personal information (name and e-mail address) detached. Statistical analyses were performed independently by EPS and AT using SPSS version 26. Data were mainly collected as ordinal data from Likert scales. Although data therefore were not continuous and, in many cases, showed a skewed distribution, we chose to analyze data with parametrical methods. Studies have shown that results of parametrical analyses are robust and to a little extent sensitive to violations of assumptions of normality and type of scale.^{18,19}

Descriptive statistics was used to identify means and frequencies. To explore associations between items, we performed linear regression analyses. Factor analysis (principal components, varimax-rotated) was utilized to develop indices for mentoring approaches, the mentors' perceived rewards and overall satisfaction. Means are given \pm S.E.M. (standard error of measurement) and with 95% confidence intervals.

Results

The overall response rate was 59% (n=272/461). 117 mentors were female (43%), 153 were male (56%) and 2 (1%) did not disclose gender. The participants were categorized into four groups by age; <40 (n=55, 20.2%), 40-49 (n=77, 28.3%), 50-59 (n=62, 22.8%) and \geq 60

years (n=77, 28.3%). 240 mentors (88.6%) volunteered to become a mentor, 13 (4.8%) were strongly urged and 18 (6.6%) reported that mentoring was mandatory in their work. Table 2 presents details on the participants sorted by university, gender, age and whether they volunteered to be a mentor.

Mentoring approach

The respondents rated their agreement with nine statements describing how they approach group mentoring on a five-point Likert scale; see Appendix 1 (Mentoring approach category). When conducting a preliminary factor analysis of the responses, the first factor explained 32.4% of the variance. The loadings for three of the items were small, while six of the nine items contributed strongly to this factor. Further, based on three of the authors' extensive experience in developing and delivering mentorship programs over a total of 20 years¹, these six statements represented a mentor with a student-centered approach. A factor analysis of the six statements was done and yielded a first factor explaining as much as 44.1% of the variance. This factor, which we labeled 'Student-centered mentoring approach', was then used as a variable in the analysis.

Mentors' satisfaction and rewards

As a measure of mentors' overall satisfaction, we utilized the item "If you consider the totality of your experience of being a mentor, how do you like it?". On a five-point Likert scale, mentors reported a high mean satisfaction score of 4.55 (± 0.04 , median 5.00, 95% CI 4.47, 4.64). Table 3 provides means and distributions of survey responses regarding satisfaction, mentoring approach and rewards. Of six items representing perceived rewards of mentoring, gratifying relationships with students and the experience of mentors' own professional development ("Mentoring allows me to explore what it means to be a good doctor") were significantly associated with the mentors' satisfaction (both items: $p < 0.05$, $R^2 = 0.328$, multiple linear regression).

In a factor analysis of the six reward items the first factor explained as much as 58% of the variance. This factor was used as a variable labeled "Rewards". There was a significant correlation between mentors' satisfaction and "Rewards" ($p < 0.001$, $R^2 = 0.330$, linear regression). In a further step, the six reward items and the satisfaction item were combined in

¹ AT and AF have been Deans of their faculties and JDB has been an Associate Dean of UGME

a factor analysis, which yielded a first dominating factor explaining 56% of the variance. This factor was used as a variable labeled “Total satisfaction”. This analysis was performed to increase the spread in responses relevant to satisfaction, since the spread on the item measuring overall satisfaction on a five-point Likert scale was low. We examined how satisfaction was associated with the mentors’ approach and found that highly satisfied mentors had a higher score on the “Student-centered mentoring approach” variable, indicating that these mentors were more student-centered ($p < 0.001$, $R^2 = 0.221$, linear regression) (Figure 1).

Mentoring topics

The participants graded their level of interest in 16 topics, on a five-point Likert scale (1 = completely uninteresting, 5 = very interesting). Also, they were asked to report how much time and/or attention had been paid to each of these topics in the mentorship meetings on a three-point Likert scale (1 = not discussed, 3 = discussed a lot). Table 4 shows means and distributions of survey responses regarding topic interest and time/attention paid to each of the topics. Ethical dilemmas had the highest mean ‘interest’ score (mean 4.49 ± 0.56 , median 5.00, 95% CI 4.42,4.56), followed by students’ clinical experiences (4.46 ± 0.59 , median 5.00, 95% CI 4.39,4.53).

We created a “Sum of interest” score, i.e. a combined score of mentors’ interest in the 16 professional content topics, to investigate the relation between these interests and mentors’ satisfaction and approach to mentoring. Both “Total satisfaction” ($p < 0.001$, $R^2 = 0.197$) and “Student-centered mentoring approach” ($p < 0.001$, $R^2 = 0.235$) increased with increasing “Sum of interest” score, see Figures 2 and 3 (linear regression). Mentors with high “Total satisfaction” took greater interest in patient-centered medicine ($p = 0.019$, $R^2 = 0.197$), and their groups spent more time discussing students’ clinical experiences ($p = 0.021$), societal poverty and health ($p = 0.007$), and patients’ suffering and sickness ($p = 0.004$) ($R^2 = 0.250$, multiple linear regression).

A “Student-centered mentoring approach” was significantly associated with interest in career planning ($p = 0.001$), ethical dilemmas ($p = 0.003$) and empathy ($p < 0.001$) ($R^2 = 0.339$, multiple linear regression analysis). Student-centered mentors spent more time discussing issues of empathy ($p = 0.007$), suffering and sickness ($p = 0.003$) and teaching clinical skills ($p = 0.021$) in the groups ($R^2 = 0.202$, multiple linear regression analysis).

Discussion

In the present study, we found that mentors at two Norwegian and one Canadian medical school are highly satisfied with their mentoring function. Mentor satisfaction, which is likely to be important for pedagogical quality and sustainability of mentor programs, seems to be associated with how the mentors operationalize their role, as well as the nature of their professional interests, especially the degree of interest in both the students' and their own professional development. Mentorship groups with satisfied mentors spent more time discussing students' clinical experiences, societal poverty and health, and patients' suffering and sickness compared to groups with less satisfied mentors.

We created an index representing mentors who perceive their roles in more student-centered ways, labeled "Student-centered mentoring approach". High levels of student-centeredness were strongly associated with satisfaction, suggesting that satisfaction is influenced by how mentors perceive their roles. This finding is consistent with that of the study by Stenfors-Hayes et al., which found that mentors who share what it means to be a doctor and who listen and stimulate reflection were more satisfied with mentoring than mentors who viewed their task primarily as one of answering questions and giving advice.¹⁵

A study by Meeuwissen et al., found that mentors may adopt three predominant mentoring approaches; 1) empowering (a holistic method to student development); 2) checking (focusing on formal requirements); and 3) directing (an authoritative approach).²⁰ The empowering mentoring approach represented a reflective and student-centered way of mentoring; mentors with this approach did not provide answers, but asked questions and engaged in their students' professional development.²⁰ Our findings echoes this study, and is, to our knowledge, the first to show that a student-centered approach to group mentoring medical students is strongly associated to mentors' satisfaction.

Intellectual curiosity can be described as a genuine interest to learn about a variety of topics: a plea for knowledge that results in exploratory behavior.²¹ In our study, highly satisfied mentors with a student-centered approach scored higher on "Sum of interests". They reported greater interest in patient-centered medicine and spent more time in the groups discussing students' clinical experiences. These results may reflect the reciprocity between joy, reward, motivation and interest in students and patients alike.

According to Self-determination theory, social relatedness, i.e. the need to belong and relate with others, is one of the basic psychological needs that influence motivation.¹⁶ In the present study, mentors who experienced fulfilling relationships with students were more satisfied. Steinert et al. described that many mentors highlighted the value of reflection and development triggered by the meetings with students and the faculty development program, in addition to the joy of bonding with students and watching them develop professionally.²² This is in accordance with our findings: student-centered mentors seem to be more satisfied in general. By preparing mentors for their roles and practicing strategies for establishing good relationships, mentoring outcomes may be improved for both mentors and students.

The majority of the mentors in this study reported that they volunteered to become mentors (88.6%). This aligns with another important psychological need in SDT i.e. autonomy.¹⁶ Voluntary participation may represent only one of the factors contributing to the mentors' autonomy; the experience of personal rewards as mentors can also increase the feeling of autonomy. Likewise, satisfied mentors who experience gratifying relationships with students may feel a greater intrinsic motivation to continue being a mentor.

Limitations

As this was a cross-sectional study, we cannot use these data to interpret causality. The mentors' responses were potentially influenced by several factors; such as preparation and faculty development, the content and process of the group meetings, administration and logistics, and any material or symbolic rewards or inconveniences of being a mentor. Another limitation to our study is that we did not explore the students' perspectives.

Our data were mainly collected as ordinal data from Likert scales and were therefore were not continuous, and in many cases, not normally distributed (as shown by colored bars in Table 3 and 4). Our choice to analyze data with parametrical methods, and not nominal or logistic regression, was informed by studies demonstrating that results of parametrical analyses are robust and to a small extent sensitive to violations of assumptions of normality and type of scale.

Despite the inherent limitations, our study has several strengths. First, we conducted this study at three universities in two countries. Secondly, we recruited a large number of participants (n=272) with acceptable response rates, in schools where the mentorship programs have been well established for many years. The panel of questions has given us the

opportunity to show relations between the mentors' level of satisfaction and several influential factors.

Conclusion

Our findings suggest that high mentor satisfaction, which is important for pedagogical quality and sustainability of mentor programs, is related to the mentors' student-centeredness and their interest in topics concerning professionalism. By preparing mentors for their roles and supporting them in developing strategies for establishing good mentoring relationships, the outcome of group mentoring may be improved for both mentors and students. Interest in students' personal development and the mentors' own professional development seem to be indicators of mentors' satisfaction and should be encouraged in mentorship programs.

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Declaration of interests: JDB, ES and UR are/have been leaders of the group mentorship programs at the three universities. Besides that, all authors report no conflict of interests.

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