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Supervision of students in the Medical Student Research Programme

SHORT REPORT

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BACKGROUND

Medical student research programmes were established in order to recruit a greater number of medical students to research. We sought to investigate what factors influenced whether students completed the programme, and the students' degree of satisfaction with the supervision they had received.

MATERIAL AND METHOD

All students who had attended the Medical Student Research Programme at the University of Bergen and who had completed their medical degree in the period 2002–June 2017, were contacted by email and invited to participate in an online survey (n = 148).

RESULTS

Out of 148 invitees, 102 (69 %) responded. Of these, 88 (86 %) had completed the research programme. The most commonly cited reason for withdrawing from the programme was that the project was not suitable for medical students. Students who were not satisfied with their supervision had a lower probability of completing the programme ($p < 0.05$). Students who received regular supervision had a higher probability of completing ($p = 0.088$).

INTERPRETATION
Good supervision and a suitable research project are important factors for ensuring that students complete the research programme.

Main message

The most frequently cited reason for withdrawing from the Medical Student Research Programme was that the research project was unsuitable for students on the programme.

Students who were not satisfied with the supervision received, had a lower probability of completing the programme.

Students who had regular supervision and had access to a supervisor throughout the study period, reported a higher rate of satisfaction with the supervision received.

Medical student research programmes were introduced at Norwegian medical schools in 2002 in order to recruit a greater number of medical students to research. Students in the research programme are intended to conduct independent research under supervision, and to undergo mandatory research training (1). Earlier evaluations have shown that the programme helps to increase the number of medical students who undertake research and to ensure that more students proceed to completing a PhD soon after taking their medical degree (2, 3). It is not known what factors drive students to complete the research programme. As a part of a larger survey among former students on the research programme offered by the University of Bergen, we wanted to investigate what factors had influenced whether students completed the programme and whether they were satisfied with the supervision they had received.

Material and method

The survey was distributed to all medical students who had enrolled in the research programme offered by the University of Bergen since the beginning in 2002 and who had completed their medical degree by June 2017 (n = 149) (2). We established contact with 148 of these people, and 102 (69 %) responded to the survey. Data collection took place in the period 14 November–12 December 2017. The survey included questions about personal background and experiences with the research programme (see Appendix).

A chi-squared test and a Fisher's exact test were used to compare those who completed the research programme to those who did not, and for factors that were associated with the degree of satisfaction with the supervision received.

All data analyses were carried out using STATA version 15.0 (College Station, Texas, USA).

The respondents were informed about the aim of the survey and were told that by submitting the completed questionnaire they were consenting to publishing of the material. The survey was anonymous and the data material was stored on a server with restricted access at the University of Bergen. The study was approved by the Norwegian Centre for Research Data (project reference number 56400).

Results

Out of 102 (69 %) respondents, 88 (86 %) had completed the research programme. The 14 (14 %) respondents who had withdrawn, had attended the programme for a median of 5.5 semesters (interquartile range 5–9). The most frequently cited reason for withdrawing was that the project was not suitable for students on the research programme (n = 8), followed by a problematic relationship with the supervisor or the research group (n = 3). Among those who had completed the programme, 17 (19 %) had considered withdrawing. The most frequently cited reasons were that they had lost interest in the project (n = 8), that the project was not suitable for students in the research programme (n = 6), a problematic relationship with the supervisor or the research group (n = 6), and that the project had a negative impact on their medical studies (n = 6).

Table 1 shows characteristics of the research programme as described by students who completed the programme versus students who withdrew. Students who were not satisfied with their supervision had a lower probability of completing the programme (p = 0.001). Regular supervision (p = 0.088), involvement with other work undertaken by the research group (p = 0.153) and regular meetings (p = 0.267) tended to increase the likelihood of completion. The completion rate did not differ between students who were completely or partly satisfied with the supervision received.

Table 1

Research programme characteristics by student completion or non-completion

	Completed the research programme (n (%))	
	Yes (n = 88)	**No (n = 14)**
Classification of the research programme project		
Epidemiological/community medicine	24 (27)	1 (7)
Clinical	21 (24)	4 (29)
Laboratory-based	41 (47)	8 (57)
Other	2 (2)	1 (7)

	Completed the research programme (n (%))	
	Yes (n = 88)	No (n = 14)
Time spent on research, as a weekly average, outside the research programme year		
< 5 hours	21 (24)	6 (43)
5–8 hours	40 (45)	6 (43)
> 8 hours	27 (31)	2 (14)
Research programme workload		
Too low	1 (1)	3 (21)
Appropriate	72 (82)	10 (71)
Too high	15 (17)	1 (7)
Regular supervision		
Yes	48 (55)	4 (29)
No	40 (45)	10 (71)
Supervisor available throughout the study period[1]		
Yes	81 (93)	11 (92)
No	6 (7)	1 (8)
Supervisor with previous experience of research programme students[1]		
Yes	37 (43)	5 (36)
No	50 (57)	9 (64)
Involved in other work within the research group		
Yes	51 (58)	5 (36)
No	37 (42)	9 (64)
Regular research group meetings[1]		
Yes	61 (69)	7 (54)
No	27 (31)	6 (46)
Satisfaction with supervision received		
Satisfied	57 (65)	7 (50)
Partly satisfied	28 (32)	2 (14)
Not satisfied	3 (3)	5 (36)

[1]Participants who answered 'don't know' were excluded from the analysis.

A total of 64 (63 %) respondents were satisfied, 30 (29 %) were partly satisfied, and 8 (8 %) were not satisfied with the supervision they received as students on the research programme. Table 2 shows factors relating to the supervision and the research group distributed by the respondents' satisfaction rate. Students who had received regular supervision and whose supervisor had been available throughout the study period showed the highest rate of satisfaction with the supervision (both p = 0.001).

Table 2

Factors associated with the supervision and the research group by the respondents' rate of satisfaction with the supervision received on the research programme

	Satisfied (n (%)) (n = 64)	Partly satisfied (n (%)) (n = 30)	Not satisfied (n (%)) (n = 8)
Regular supervision			
Yes	42 (66)	10 (33)	0 (0)
No	22 (34)	20 (67)	8 (100)
Supervisor available throughout the study period[1]			
Yes	64 (100)	23 (79)	5 (83)
No	0 (0)	6 (21)	1 (17)
Supervisor with previous experience of research programme students[1]			
Yes	28 (44)	11 (38)	3 (38)
No	36 (56)	18 (62)	5 (63)
Involved in other work within the research group			
Yes	39 (61)	15 (50)	2 (25)
No	25 (39)	15 (50)	6 (75)
Regular research group meetings[1]			
Yes	44 (70)	21 (70)	3 (38)
No	19 (30)	9 (30)	5 (63)

[1]Participants who answered 'don't know' were excluded from the analysis.

Discussion

This study investigated factors associated with student completion of the Medical Student Research Programme at the University of Bergen, as well as the students' degree of satisfaction with the supervision they received. We found a lower probability of completion among students who were dissatisfied

with the supervision, compared to those who were partly or completely satisfied. Almost half of those who withdrew from the programme said that part of the reason for doing so was a problematic relationship with their supervisor or research group. The national evaluation of medical student research programmes undertaken in 2006 showed that 75 % of students were satisfied with their supervision while 19 % wanted more supervision (3). We also identified a trend suggesting that regular supervision led to a higher programme completion rate. Many medical faculties have written guidelines that stipulate regular contact between supervisors and students on the research programme (4–6). Furthermore, there was a higher rate of satisfaction among students who had received regular supervision and had access to their supervisor throughout the research period. These findings support the argument that medical students on a research programme need regular follow-up. They also demonstrate the importance of a good relationship between student and supervisor.

The most commonly cited reason for not completing the research programme was that the project was not suitable for a research programme student. This was also one of the most frequently cited reasons for considering whether to withdraw from the programme among students who completed the programme. Properly planned projects that are suitable for medical students with limited knowledge and experience of research are therefore important for keeping students on the programme.

The principal weakness of this study is the reduced statistical robustness caused by the low number of students who withdrew from the programme (2). This may have caused type II errors with true correlations missed. We cannot exclude selection bias despite the high response rate as we had no opportunity to describe the former research programme students who did not respond to the survey.

The assessment of whether projects are suitable for medical students on a research programme, and the students' relationship with their supervisors, have only been described from the students' point of view. Nevertheless, the students' assessment of their time in the research programme is an important perspective which has never previously been systematically investigated and may help to ensure that more students complete the research programme.

The Medical Student Research Programme at the University of Bergen has introduced annual follow-up meetings as an initiative to ensure that students are well supported and that problems are solved as early as possible. Further initiatives to raise the quality of the research programmes offered by Norwegian medical schools may include supervisor training and the introduction of further requirements relating to the supervision and follow-up of students who attend the programmes.

Conclusion

This study shows that a good relationship between student and supervisor, combined with a realistically achievable project, are important factors for ensuring that students complete the research programme offered by medical schools.

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