



Introduction of an academic internship in Ireland: views of undergraduate medical students

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Abstract

Introduction A combined academic and clinical training programme for junior doctors in Ireland, the academic track for internship, has recently been launched. The academic track offers newly graduated doctors protected time within the working week to undertake a research project in addition to funding, an academic supervisor, and additional training in research skills. This study seeks to investigate the views of undergraduate medical students.

Methods The study population was undergraduate medical students at Trinity College Dublin in their penultimate year of study. An online questionnaire was designed and disseminated via a gatekeeper. Descriptive statistics were used to carry out data analysis on students' responses.

Results The response rate was 50/203 (24.6%). All respondents indicated that protected time would be 'very important' or 'important'. The most frequently cited reason for participating in the academic track was 'To progress my career in a particular specialty' (28/42). The most frequently cited anticipated achievement was research publication (39/42). The most common response when asked what concerns (if any) students had about participating in the programme was 'I am not sure I could achieve all the clinical competencies of an intern in addition to research' (58%).

Discussion There was a significant interest in the academic track for internship, and it is perceived by students as being of benefit to their careers. The value of protected time and an academic supervisor were recognised, and a research publication was the most frequently cited anticipated outcome. The data gathered in this questionnaire will help inform curriculum development and the identification of suitable learning outcomes.

Keywords Academic clinicians · Curriculum planning · Education environment · Medicine · Postgraduate education · Research training

Introduction

There is growing evidence to suggest that physicians who engage in research at an early career stage will continue to do so throughout their careers. Studies from the USA have shown that residents in urology [1] and orthopaedics [2]

who publish a research paper during residency are more likely to continue publishing in their future career. Another US training programme which integrated graduate coursework and research training with subspecialty fellowship, including protected research time, reported its outcomes at 20 years. It found that more than 80% of graduates were actively conducting research and 71% had academic appointments [3]. Graduates of the UKAFP (the Academic Foundation Programme in the UK, which combines clinical training with protected research time during the 2 years of internship) are more likely than their peers to progress to specialty training (69.0% vs. 50.8%) and are far more likely to pursue specialist academic training (12.3% vs. 0.5%) [4]. These reports indicate that early career opportunities and training in research help drive further research and innovation at a later career stage.

Every year, Ireland loses hundreds of medical graduates to training programmes overseas. A recent survey of over

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2000 medical students in Ireland found that 88% were either definitely migrating or contemplating migration following either graduation or intern year. The primary factor influencing their decision (cited by 88%) was lack of career opportunities [5]. A combined academic and clinical training programme for newly qualified doctors, the academic track for internship, has recently been launched in a pilot phase in Ireland. This academic track offers participants protected time within the working week of their 1-year internship to undertake a research project in either clinical research, medical education, or healthcare leadership and management; in addition, funding, a dedicated academic supervisor, and additional training in research skills will also be provided as part of the programme. The pilot programme has 24 posts nationally representing approximately 3% of all intern posts. A major goal of the programme is to retain medical talent in Ireland by providing such early career research opportunities.

International data looking specifically at the expectations and needs of participants of a combined clinical and academic training programme prior to specialisation are very limited. One study of 328 medical students in the USA investigated reasons why students take time out of their undergraduate course to pursue research. The most common reasons cited were ‘to increase competitiveness for residency application’ (32%), ‘time to pursue other activities’ (24%), and ‘academic interest’ (23%) [6]. However, this survey examined undergraduate students’ views of undertaking research at an undergraduate level, rather than a postgraduate level. Although various stakeholders such as the Medical Council of Ireland and the HSE-NDTP (Health Service Executive - National Doctors Training and Planning) were involved in the development and recruiting phases of the Irish academic track, to date, no data has been gathered from Irish undergraduate medical students (who may also be regarded as key stakeholders), in relation to their views on the availability of an academic track for internship. This study aimed to investigate the opinions of undergraduate medical students on the potential advantages and disadvantages of the introduction of an academic track for internship in Ireland.

Methodology

Study population

The population surveyed was undergraduate medical students at Trinity College Dublin in their penultimate year of training. All medical students in the class who had a Trinity College email were invited to participate in the survey. Medical students who were more than or less than 1 year away from applying to internship were excluded from the study.

Questionnaire design

The questionnaire was created using the online software SurveyMonkey®. A member of the School of Medicine’s administrative staff acted as a gatekeeper in the distribution of the email to participants to avoid potential coercion. The questionnaire was designed based on a review of the literature and current academic programmes for interns, in particular the UK AFP. There were four parts to the questionnaire:

1. Demographic details
2. Knowledge of the UKAFP and academic track for internship in Ireland
3. Expectations of what the academic track would involve and learning needs
4. Reasons for and concerns about participating in the academic track

The questionnaire was piloted with a group of five final-year medical students and amended based on their feedback. The study received an approval from the School of Medicine’s Research Ethics Committee, Trinity College Dublin, in January 2017.

Data collection

The questionnaire was emailed to the study population by a gatekeeper on 6 February 2017. A reminder email was sent on 22 February 2017. Due to a low response rate, a second reminder email was sent on 2 March 2017. The survey was closed on 6 March 2017.

Data analysis

The study collected descriptive data which were collated and presented in the form of graphs and tables. Descriptive statistics were used to carry out data analysis on the responses.

Results

Response rate

The questionnaire was electronically sent via a gatekeeper to all members of the fourth-year medical class in Trinity College Dublin using the college/student emailing list, $N = 203$. The total response rate was $50/203 = 24.6\%$.

There were 31 (62%) female and 19 (38%) male respondents. The majority of respondents (66%) indicated that they had no prior third-level qualifications. Of the remainder, the most commonly held third-level qualification was a Master’s degree (16%).

Awareness of academic internship programmes

Sixty percent of respondents had no knowledge of the UKAFP prior to participating in the questionnaire, and a similar number (58%) had no prior knowledge of the Irish academic track. Fifty percent of respondents intended applying for the Irish academic track. A greater proportion of male students were planning on applying for the Irish academic track compared to females (58% of male respondents vs. 45% of female respondents); students with prior third-level qualifications were also more likely to be considering applying for the Irish academic track (59% of respondents with third-level qualifications vs. 45% of respondents without third-level qualifications).

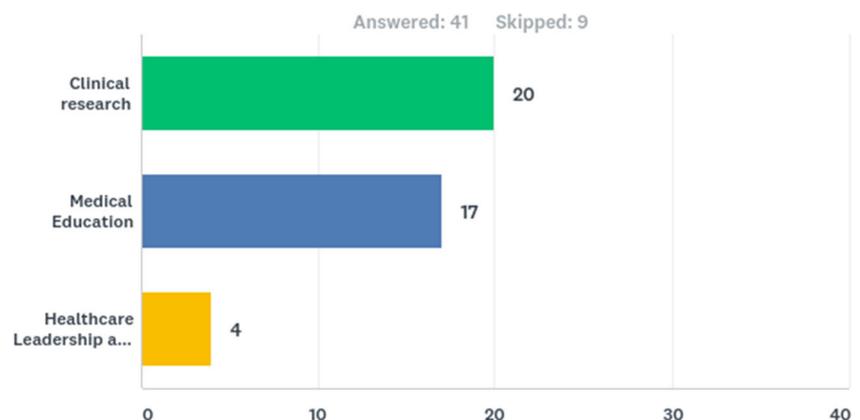
Expectations of what the academic track would involve and choice of academic track

Respondents were asked to select which of the three possible academic track streams they would be most interested in: clinical research, medical education, and healthcare leadership and management. The most popular stream was clinical research (20/41) followed closely by medical education (17/41); least popular was the healthcare leadership and management stream (4/41) (Fig. 1).

Female respondents were most interested in pursuing a medical education project (13/24), whereas male respondents were more likely to indicate an interest in clinical research (12/17) (Fig. 2).

The highest rated aspect of the academic track was protected time for research, all respondents rating this as ‘very important’ or ‘important’. The next highest rated aspect was the presence of a supervisor, with 40/42 respondents rating this as ‘very important’ or ‘important’. Presenting at national and international conferences and writing a research proposal or paper were also highly rated, with 36 and 35 respondents respectively rating these as either ‘very important’ or ‘important’ (Fig. 3).

Fig. 1 Academic track stream preferences



Attitudes towards participation in an academic track

Respondents were asked to list their reasons for participation in an academic track programme from a list of options (see Table 1).

The most common reason cited for participating in the academic track was ‘To help progress my career in a particular specialty’, with 28/42 respondents indicating this as a reason for participating in the academic track. This was followed by ‘I wish to pursue a career in academic medicine, medical education or healthcare leadership and management’ (27/42) and ‘I am interested in clinical research and would like to participate in a research project’ (26/42).

Female respondents were most likely to view the academic track as an opportunity to help progress their careers in a particular specialty (17/25). By contrast, male respondents were more likely to cite ‘Interested in clinical research and would like to pursue a research project’ as their reason for participating in the academic track (13/17).

Participants were asked to identify what they would like to achieve by participating in the academic track. The most frequently selected achievement was ‘research publication’, with 39/42 participants choosing this option. The next most frequently selected option was ‘development of clinical research skills’, with 34 respondents choosing this option. Raising research funds was the least commonly chosen output (6) (see Fig. 4).

The most commonly cited concern among participants in the questionnaire was that they were not sure if they could achieve all the clinical competencies that would be required of them as interns, in addition to their research project (58.33%). A concern about not having enough focus on clinical work was also frequently expressed (56.25%) (Fig. 5).

Discussion

This study investigated, for the first time, the views of undergraduate medical students in relation to the

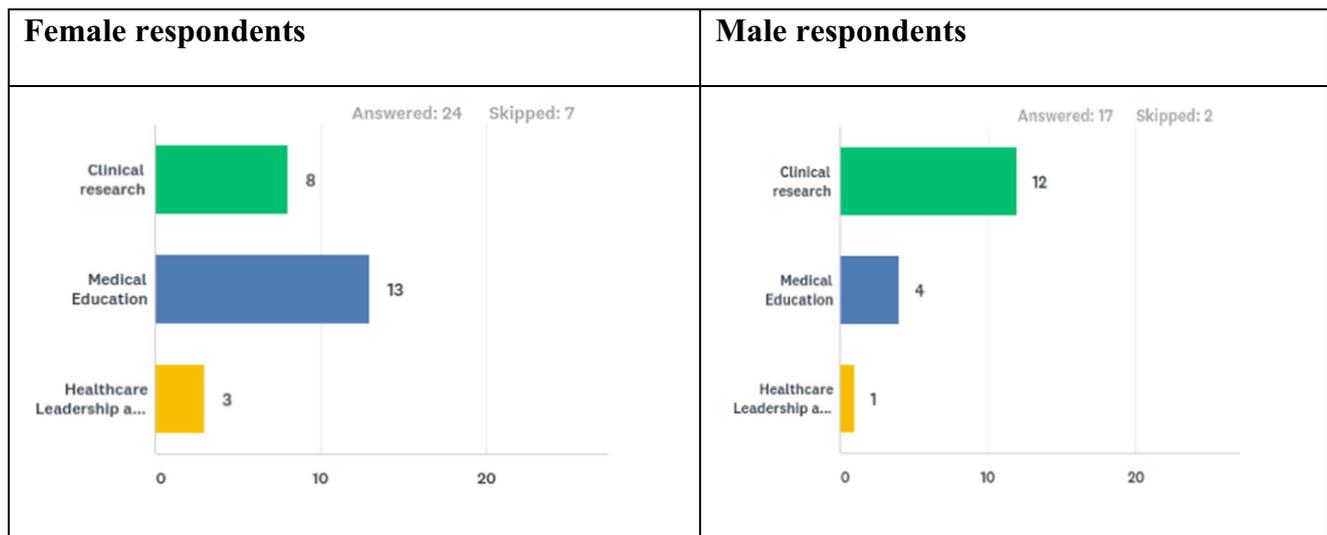


Fig. 2 Academic track stream preferences by gender

introduction of an academic track for internship in Ireland. The results of the study showed that, prior to participating in the questionnaire, the majority of respondents had no knowledge of either the UKAFP or the academic track for internship in Ireland. Limited awareness of the Irish academic track among students in February 2017 (the time the questionnaire was disseminated) is not unexpected as the academic track was still in the early stages of the first ever recruitment process at the time.

A greater number of students (25/50) indicated that they were considering applying for the academic track for internship than were actually aware of it prior to completing the questionnaire (21/50). In addition, there was greater interest among students in the Irish Academic Track compared to the UKAFP. These results suggest that there may be strong interest in a combined clinical/academic training programme based in Ireland among future medical graduates and therefore that an increase in the number of academic posts available might

Fig. 3 Importance of different aspects of the academic track

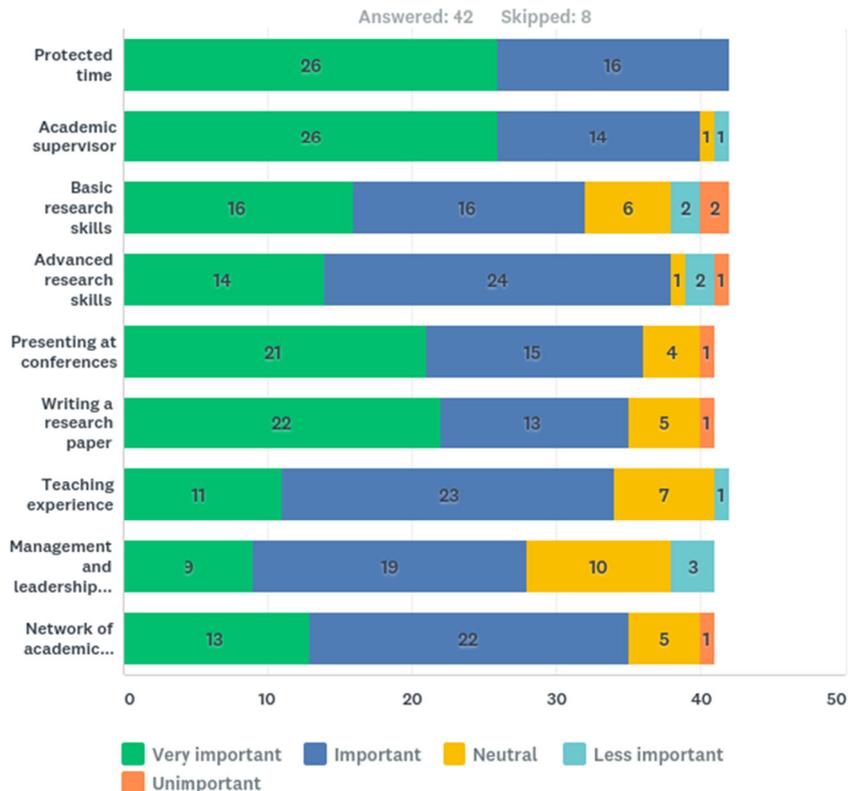


Table 1 Reasons for participating in the academic track

Reasons for participating in the academic track for internship
1. I am interested in clinical research and would like to participate in a research project
2. I wish to pursue a career in academic medicine, medical education or healthcare leadership and management
3. To get research/teaching/leadership and management experience and skills
4. To see what being an academic/healthcare leader is like
5. To help progress my career in a particular clinical specialty
6. To make connections with academics/leaders in healthcare
7. Other (please specify).....

be warranted. However, since the response rate was low, this preliminary finding would need to be validated by further studies in this area.

Overall, participants indicated a greater interest in participating in an academic track focussed on clinical research compared to either medical education or healthcare leadership and management. A similar trend is seen in the UKAFP. From a survey conducted on 201 participants in the UKAFP in 2016, 85.23% were engaged in clinical research, 13.33% in medical education, and 4.76% in healthcare leadership and management [7]. No studies exist investigating the reasons why

students would be more interested in pursuing clinical research as opposed to medical education or healthcare leadership and management. It may be that students view experience in clinical research as being more desirable to future employers than one in medical education or healthcare leadership and management. There is evidence in the literature to suggest that this may be the case: one US study cited ‘increase competitiveness for residency application’ as the primary reason for undergraduates to take time away from their degree to undertake clinical research [6]. It may also simply be that more students are interested in clinical research, as this was

Fig. 4 Anticipated outcomes of the academic track

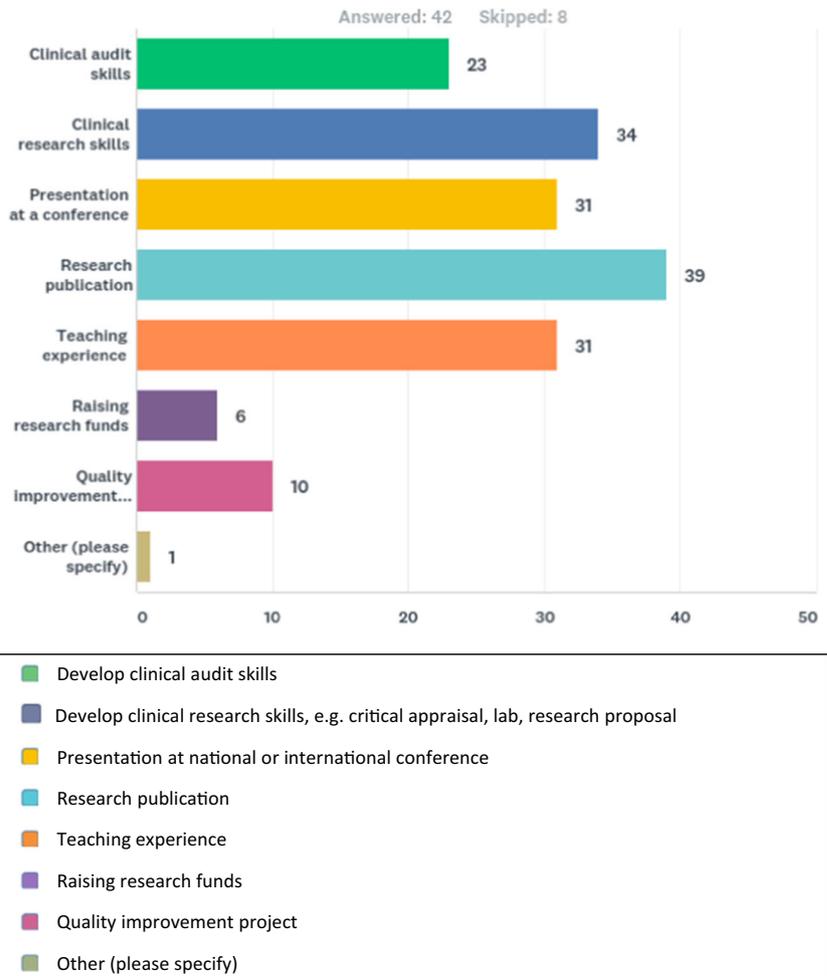
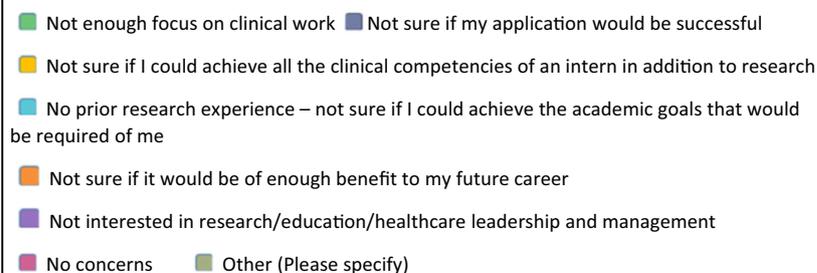
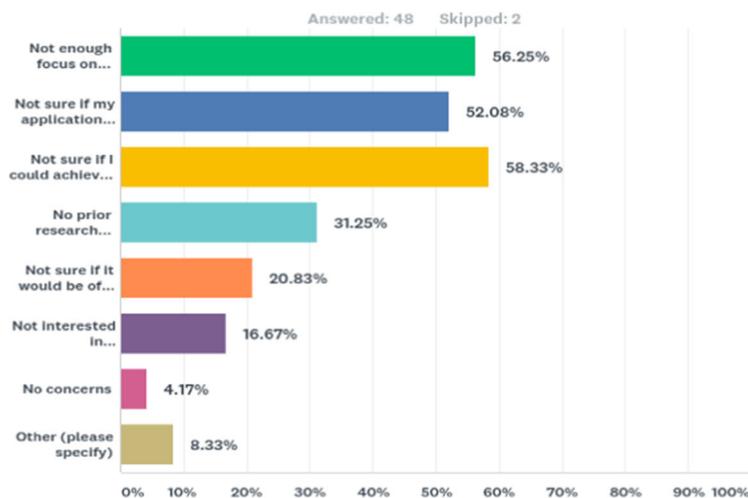


Fig. 5 Concerns expressed about participating in the academic track



the second most cited reason in this study for participating in the academic track. Another reason for the apparent limited interest in a healthcare leadership/management stream could be due to a lack of understanding about what this would entail. Students were provided with three options but not a description of what each option would involve. A lack of prominent role models for in healthcare leadership and management might also be a factor. However, these preliminary findings would need to be validated by larger studies.

It is interesting to note that there is a difference between male and female students' responses to this question, with female students being much more interested in medical education compared to male students: out of the 17 students who chose medical education, 13 were female. Reviewing the literature reveals no studies which might explain this phenomenon, and this potential signal would require follow-up with further research.

The most valued aspect of the academic track for internship among all study participants was having protected time during the working week to undertake research. One systematic review of methods to increase scholarly activity in US residency programmes cited protected time as one of the interventions which generally increases participation in scholarly activity [8]. Another study looking at publication outputs of trainees graduating from a urology training programme in US hospitals

found that publication output was directly correlated with increasing protected time for research activities, and furthermore, publication during residency predicted future academic achievement [1].

Having an academic supervisor was also highly valued by the vast majority of respondents. Careful and continuous mentoring is a key element of many combined clinical/academic training programmes, such as Columbia University's Research Track Programme for psychiatry residents [9]. Mentorship was cited as one of the most significant factors for success in academic medicine by American paediatric surgeon-scientists [10]. A good relationship with a mentor was positively correlated with an interest in academic medicine in a US study of undergraduate medical students [11]. Conversely, insufficient access to supervisors and mentors can be seen as a barrier to participating in research, according to a recent study of Canadian plastic surgery trainees [12]. It is important therefore to ensure academic interns will have appropriate mentorship and supervision and that mentors themselves are also adequately supported in their role.

The commonest reason cited for participating in the academic track was 'I wish to progress my career in a particular specialty'. This might indicate that some students view the academic track not necessarily as a step towards a career in academic medicine, but more as a valuable way of improving

their chances of success in pursuing a career in a particular specialty. This response is similar to that found in a survey of medical students who had taken a year out to pursue research in five US universities: while ‘academic interest’ was commonly cited (23%), the most frequently recorded response was ‘to increase competitiveness for residency application’ (32%) [6]. The preliminary data from this study suggests that the academic track will be attractive potentially to ambitious graduates who wish to progress their career in a particular specialty, thereby retaining this talent in Ireland.

The most frequently cited concern about participating in the academic track was that students may not achieve all the clinical competencies required for standard internship in addition to the goals required for an academic internship. Students also frequently expressed concern that there would not be enough focus on clinical work. The provision of protected time during the working week necessitates taking time away from the wards, thereby potentially impacting on clinical experience. However, there is evidence to suggest that taking time to participate in clinical research does not undermine trainees’ clinical abilities and may be correlated with a higher performance in the workplace. A study of residents graduating from the Mayo Clinic between 2006 and 2012 found that scholarly activity based on journal publication was positively associated with clinical performance, as measured by validated workplace assessments [13]. Nonetheless, it is recommended that the clinical jobs which are paired with the protected research time offer excellent clinical supervision and experience to overcome any shortfall in clinical exposure. This issue will require further monitoring during the pilot phase of the programme.

Study limitations

The response rate of the questionnaire was low at 24.6% ($N=50$). Attempts were made to maximise the response rate by sending two email reminders and by circulating the questionnaire during term time when students would be more likely to check their emails. Although the response rate was rather low, the majority of respondents (43) were interested in pursuing a combined academic/clinical training programme, so it is likely that those students with no interest in combined academic/clinical training would have been far less likely to respond to the survey, seeing neither a direct nor indirect benefit to themselves. Nonetheless, given the small number of students participating in the questionnaire, the findings should be viewed as preliminary and interpreted with caution, especially where the study cohort is further subdivided (e.g. male vs. female respondents).

The study cohort was comprised entirely of fourth-year medical students from Trinity College Dublin. However, the academic track in Ireland is intended to be a national

programme, available to all newly qualified medical doctors. Furthermore, Trinity College Dublin does not operate a separate graduate entry medical training programme; therefore, views of this potentially important group were excluded from the study. Surveying students across all six medical schools in Ireland would have increased the validity of the study findings. Nevertheless, the findings of this study have provided useful preliminary data in relation to the potential need and viability of the academic track for internship in Ireland.

Further research is recommended to validate these preliminary findings; studies should include participants from across all medical schools, including graduate entrants to medicine. Studies following the career progression of graduates of the programme will provide useful information on the long-term value of the programme both at a personal and health service level.

Conclusion

This study is the first of its kind investigating the opinions of undergraduate medical students of a combined clinical/academic training programme for doctors in their first year after graduation. The findings are closely aligned to similar studies in other populations and within its limitations provide some additional insights such as the concern students might have about participating in such a programme. This data will be useful in designing an appropriate curriculum and learning outcomes for future academic interns, as well as strengthening the case for expansion of the programme following its successful piloting.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed were in accordance with the ethical standards of the Trinity College Dublin School of Medicine’s Research Ethics Committee and with the 1964 Helsinki Declaration and its later amendments.

Informed consent Informed consent was obtained from all participants included in the study.

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