Title Page

Title:

An evaluation of a student led career profiling project to support the exploration of a career in general practice and other specialties.

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Abstract

Background: Choosing medical careers is complex but the undergraduate period is formative. St. George's University of London (SGUL) students called for greater careers information.

Aim: To develop & evaluate students' careers resources.

Design & Setting: A quality improvement student staff project at SGUL.

Method: A "Plan, Do, Study, Act" (PDSA) cycle was completed. For the "Plan" element we surveyed students' career intentions and information preferences. For the "Do" element, video interviews with clinicians and infographic posters were produced and published on SGUL's virtual learning environment. For the "Study" element, feedback questionnaires were thematically analysed using Kirkpatrick's framework. For the "Act" element the model was rolled out across SGUL programmes.

Results: (Plan) 79 students ranked interest in specialties, with GP 2nd most popular. Students were unconfident how to pursue careers and wanted more information. (Do) 13 careers videos & infographics were created for 10 specialties. The (Study) questionnaire showed changes across 3 of Kirkpatrick's levels. Level 1 (Response) students found resources helpful & accessible. Level 2 (Learning) students reported increased understanding of careers. Level 3 (Transfer) students planned using checklists and made career comparisons by specialty. Level 4 (Results) students' career choices were not demonstrated but there were tentative proxy measures such as copying and modelling career routes and choices. (Act) involved rolling out and regularly updating resources.

Conclusion: This PDSA model enabled development of resources by students mapped to students' needs. We demonstrated changes in relation to students' response, learning and transfer, with tentative suggestions of impact on career choice.

(Words: 250)

How This Fits In

Advice on medical careers at the undergraduate level is key.

There is little published on effective ways of delivering and evaluating the impact of careers resources for medical students.

Careers talks can usefully be supplemented with structured video interviews and infographics.

There appears to be useful opportunities to shape students' interest in GP careers at the undergraduate level.

An evaluation of a student led career profiling project to support the exploration of a career in general practice and other specialties.

Introduction

Choosing a medical career is complex, the undergraduate period is formative when potential choices are reinforced or discarded (1). The process of selecting a career often starts before medical school (2), and continues beyond graduation. Junior doctors apply for specialty training during the foundation programme (3) meaning time to explore specialties beyond medical school is limited (4), with a scarcity of information available in the foundation years (5) (6).

Various reviews identify students' demographic or medical school factors that influence career choices(4). Decisions are known to be partially moulded by students' undergraduate experiences of a given discipline (1). The culture of the medical school is also an important influence on students' choices (7) (8). There is however, uncertainty about which factors are important, and to what extent undergraduate factors can influence longer term decisions about careers for example, in primary care (9).

The General Medical Council (GMC) has specified that medical schools should provide career advice (10). However, this advice is no longer mandated in the current GMC "Outcomes for Graduates" (11). The 2008 "Took Report" identified careers guidance as vital to the NHS's recruitment strategy for junior doctors (12).

Specifically, UK NHS general practice recruitment is a major issue (13). In 2016, Health Education England (HEE) & Medical Schools Council (MSC) produced the "Wass report" outlining how medical schools could improve GP recruitment (13). Suggested interventions included helping students to make informed career decisions (Recommendation 15) (13), now available via NHS HEE (14).

Relevant, informative and accessible careers advice at medical school is key, (15) (16) but it is unknown how best to effectively deliver this to students. We found limited published evidence for the role of active careers interventions at medical school and how effective this might be. (1) (4) (17) (18) (19) (20) (21) (22).

In this paper we aim to describe how we updated our careers advice provision and how we evaluated it.

Methods

St George's University of London (SGUL) is a UK medical school with a 5 year undergraduate course and a 4 year graduate entry programme (23). SGUL's National Student Survey highlighted the need for increased careers information (24). (25) In response to this, a "Plan, Do, Study, Act" intervention cycle was undertaken. The PDSA framework is widely used in healthcare and its very pragmatic approach allows testing of small scale interventions and rapid assessment of their impact (26). This approach was chosen as we had no specific resources beyond student time. For the "Plan" element, students were surveyed to identify what careers resources they wanted and to inform the planning and design of new novel online careers resources. For the "Do" element video interviews with consultants, GPs and trainees, backed by infographic posters which included specialty training information, were produced and published on SGUL's virtual learning environment.

For the "Study" element this careers intervention was evaluated using the Kirkpatrick's four level model of evaluation of training (27). The "Act" element was determined by the response to these initiatives which included institutional presentations. Kirkpatrick's model is widely used as an evaluative framework in healthcare and education. The first level (Level 1) is the reaction level - how participants react to the training. Level 2 looks at learning - what have participants learned as a result of the training. Level 3 identifies behaviours or activity that have changed as a result of the activity. Level 4 explores if there are results of the activity.

The careers resources were evaluated via an online feedback questionnaire which was sent to SGUL medical students. This survey was circulated to all SGUL students 3 months after the resources were launched. Numerical questionnaire data was analysed using simple descriptive statistics and there was a thematic analysis of qualitative data (28). The usage of the online video and infographic resources was anonymously captured.

We used the data from the follow up survey to establish if there were changes at Kirkpatrick levels 1-3. However, we would not expect to see level 4 "results" changes which will take several years to become apparent but explored if we could observe any change in careers intention as a proxy for level 4.

The project was conceptualised as a quality improvement project so ethics approval for the evaluation was not required. Participation in the survey was optional and anonymised.

Results

Plan

As part of the "Plan" element we formed a Staff Student Partnership Group (SSPG), consisting of 6 medical students, the MBBS careers tutor (a GP) and an SGUL careers consultant. Table 1 shows a reflexive statement of authors' career stage and interests.

Table 1 about here

An initial survey of medical students in November 2018 established existing knowledge of speciality training pathways, the specialities students most wanted additional information about, and the preferred format for such information. 79 responses were received of which 65/79 were from clinical students. Most students declined to provide further demographic information but of those that did (n=19) most were female and on the 5 year course. Overall response rates were low but highest among clinical students (up to 9.6%).

General practice was among top scoring specialties (39% student interest). Only 35% of the 79 students surveyed felt confident in how to pursue a career in their chosen specialty. Furthermore, 94% wanted more careers information. Events with speakers and interview style videos were cited as preferred formats for information delivery, followed by written information. Careers events with speakers were already delivered through the SGUL MBBS programme. In response to the survey we focussed on designing and developing new careers videos and infographics, in specialties prioritised by the student survey (Figure 1).

Do - Development of the training intervention

The students from the SSPG created 13 career videos, covering the 10 most highly ranked specialties, with supporting infographics (see Figures 1& 2) to supplement the existing careers talks.

The process was as follows; the project group developed an interview framework including standardised questions across specialties (Appendix 1), based on prior resources developed for the Academic foundation programme. Inspiring role models were identified through SGUL alumni and students' placement experiences. Once students had video production training, video interviews were conducted with GPs, consultants, and trainees without any

piloting. Videos were edited for brevity, but interviewees could not review or change the content. The supporting infographic posters provided summary information covering training pathways, competition ratios and further careers resources (Figure 2).

The new resources were published on the SGUL virtual learning environment and advertised via newsletters, emails and student placements in early 2020.

Study

An online feedback questionnaire was undertaken from February to May 2020 (overlapping with Covid lockdown measures in the UK from 23/03/20). Of the 66 responses 68% (n=45) were studying on the 5 year programme and 59% were female (n=39). Moreover, the majority were in the clinical years.

In terms of resource usage, infographic resources were utilised more than the videos (see table 1). The rank orders of how often a resource was used varied between infographic and video. Interpretation was limited as some specialities had videos both from consultants and registrars. The general trend indicated hospital surgical and medical specialties attracted most interest; followed by obstetrics & gynaecology (O&G) with GP behind these disciplines (ranked 5th and 8th). This was at odds with the higher numbers of students from the initial survey wanting more information about GP careers (see Table 4).

Kirkpatrick Level 1 (Reaction)

66 students completed the feedback questionnaire of whom 85% (n=56) scored the usefulness of the resources as at least 4 out of 5 (5=most, 1=least useful).

Qualitative feedback identified the importance of career information and difficulty accessing this from other resources.

> *"The only way you can learn about a speciality is to have a conversation like that with doctors, but you have very little exposure to some of those specialities in lower years, so this ... is very useful."*

Students responded positively to resources and information about specific specialities,

> *"The videos were excellent and very informative about the day-to-day life of specialties."*

And the accessible format of information provided,

> *"Really useful and relevant information, ... Really fantastic resource."*

Other students responded to specific information on how to progress through certain careers,

> *"Summarises all the key information and shows the structure of the training and when you move up the ranks."*

One important consideration was the timing of the resources' availability in relation to where students were in their careers,

> *"I wish this was shown in 1st/ 2nd year as it is a very useful resource."*

As earlier provision could allow students to tailor their activities and have enough time to develop their CVs for specific careers,

> *"...focus on specific ways on how to boost your portfolio in medical school & foundation years".*

Level 2 (Learning)

Among respondents, 94% (n=62) reported an increased understanding of the specialties covered by the resources. Students valued hearing clinicians' perspectives, which they described as 'honest' and 'insightful'. They appreciated understanding more about daily life, and training pathways, which they didn't get to explore on placements.

> *"Good to have advice for students and the drawbacks of specialties."*

Understandably there was a lot of uncertainty about possible careers,

> *"...(students) are still unsure of what they want to do in the future."*

But students were often focussed on what it would be like to follow a specialty during the early part, rather than the whole arc of a career,

> *"Interesting to see the viewpoints of doctors in training as well as consultants."*
> *"Trainees are more relatable."*

Level 3 (Transfer)

There was evidence of Kirkpatrick's knowledge "transfer" as students planned using the resources as checklists and were able to directly compare specialties,

> *"Infographics are super helpful and can actually be used as a checklist."*
> *"Really liked the videos all asking the same questions so you could compare specialities."*

An example of transfer involved students preparing and gaining extra skills,

> *"Advice on how to prepare at medical school for certain specialties,"*

and the difficulty of gaining these extra skills,

> *"It's easy to say things like 'get involved in research and audits' as advice, but this is practically impossible if you don't have any connections to clinicians."*

And how this might be resolved,

> *"Helpful, especially the 'useful experience' bit, may include links to other ways we can get involved?"*

Students showed an awareness of the competitive nature of entry to many specialties,

> *"...showing an example of a successful/typical applicant's portfolio to have a better sense of how difficult it is to get into a speciality,"*

and students wanted to know how they could gain an advantage over other applicants,

> *"...more "off-piste" opportunities which set candidates apart."*

Level 4 (Results)

We were unable to demonstrate Level 4 changes in terms of career choice within the timescale of this project. However, there were tentative suggestions of proxy measures of choice such as copying career routes,

> *"Learning about different peoples' careers and how I might be able to copy them on my own,"*

and modelling career choice,

> *"The descriptions of day-to-day life in that specialty, the drawbacks,"*

and its associated lifestyle,

> *"The daily life of a surgeon. As work-life balance is something very important for me."*

There was realisation among students that for many clinicians' careers were unplanned,

> *"...we get the impression... that every consultant had decided on their future speciality before they took even their GCSEs, but in reality, it's much less organised than that."*

GP vs hospital careers

General practice appears reasonably popular in comparison with other specialties as do other front-line specialties like emergency medicine and psychiatry (Figure 1). However, the qualitative data largely focussed on careers in secondary care,

> *"It is nice to have consultants doing the video, as they have a wealth of knowledge regarding their speciality,"*

with very few seeking further information on primary care. However, some students are thinking about general practice, public health or some other community focused speciality,

> *"Knowing about what you can do with you career outside of the hospital is nice, as obviously we would struggle to know that until we are in that position."*

The diverse student population at SGUL in terms of graduate entry, and those with caring responsibilities is picked up in quotes suggesting priorities such as flexibility within specialties, when considering careers,

> *"...students are from alternative pathways e.g. mature students, student parents. We need more insight to the realities of the different pathways and the difficulties to be faced when entering practice later on in life."*

Act

The project and evaluation were presented and positively received at SGUL's Education and Careers forums. Plans are in place to produce resources for a wider range of specialties and distribute the model and resources across other SGUL programmes. The timing of release of resources, and to which students, needs consideration in order to allow students opportunities to tailor their CV, by joining societies, undertaking projects, research or audits. Within the PDSA cycle this roll out is the "Act" element of the cycle.

Discussion

Summary

This SSPG at SGUL produced a bank of accessible new careers resources, which were mapped to students' needs. General practice and other front line specialties do seem of interest to students, based on the initial survey; at odds with national trends (29). The remote delivery of these resources was important during the Covid-19 pandemic when students had reduced contact with clinicians, and limited opportunities for informal career conversations. (15).

Strengths and Limitations and Comparison with Existing Literature

The positive feedback demonstrates the value of having relevant and useful resources, developed by students for students. Evaluation of careers interventions are rare and the use of quality improvement evaluation frameworks are therefore relatively novel in this field. As is data about student engagement and preferences on the mode of delivery; absent in the literature. These were strengths of the study and something other medical schools may consider when developing careers advice.

There are limitations to this initiative, primarily related to it being from one institution therefore limiting generalisability. We were only able to produce a limited number of new resources, and

these were prioritised by student preference, as indicated in the first survey. What they prioritised would likely be a complex mix of personal interests and gaps in available knowledge or resource, hence their idiosyncratic selections; omitting some common general medical specialties like cardiology (perhaps addressed by curriculum exposure) and ranking niche specialties like plastic surgery (not covered by our curriculum). Challenges in our analysis were presented by the limited response rate and demographic data on students' gender (30), graduate status or age (31); known predictors of career choice. Establishing students' prior career preferences may have helped further evaluate the impact of our resources but this wasn't done in the interests of survey brevity.

The impact of careers interventions can take several years to become apparent. What's more, there will be multiple factors involved in influencing career choice which are beyond the scope of this quality improvement project so any suggestions of level 4 changes or proxy changes in this study must be highly tentative. The aim of this project was however to improve students' knowledge and understanding about careers, rather than to direct them towards a specific career.

Implications for Research and Practice

The project model provides a framework for institutions to produce a student focussed careers resource which appears to have a positive impact on students' understanding and engagement with career planning, including that of general practice. This may be of relevance to other medical schools but also in the post graduate fields such as on the UK foundation programmes. Further research exploring the impact of a comprehensive range of careers resource may address issues with the limited careers selection in this study. Shaping medical careers is of fundamental importance to all health care systems, with even one trainee changing programmes (or leaving) having significant financial and personal implications. A comprehensive overview of careers interventions (perhaps as a Realist or narrative review in the absence of any trials) would seem a priority. Use of routine data such as UKMED could be used to explore the impact of careers interventions (and generate meaningful Level 4 data) (32). The study has limited implications for an individual clinician with a student, beyond what is already known about the value of enthusiastic role models. However, accessible relevant resources for students, in addition to careers lectures, does have implications for institutional delivery of careers resources.

Further work within SGUL is underway to expand the specialties involved, improve students' access to the resources across the graduate and undergraduate programmes and ensure resources are accurate and updated.

Figure 1: Percentage of students interested in more information by specialty (n=79).

Figure 2: Example videos and infographics.

Appendix 1: Video Interview Questions

Table 1 : Authors' reflexive statements

Table 2: Video / Infographic Usage

(Words: 2744)

Notes

Competing Interests

EM has a paid role in providing careers resources for SGUL. MJ line manages EM. The other authors declare that no competing interests exist.

The authors report no conflicts of interest in this work

Ethical Approval

This was a quality improvement project. Ethics approval for the evaluation was not required.

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