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The development and implementation of a bespoke teaching curriculum for final year University of Bristol medical students during the COVID-19 pandemic.

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Research Article

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Abstract

Background:

The COVID-19 pandemic necessitated the cancellation of final year medical student experiences, such as finals examinations, face-to-face teaching, and structured assistantship programmes. This heightened an already established feeling of unpreparedness for their transition from academic studies to becoming acute caregivers. To address this, we developed a fully virtual teaching course. The primary aims were to improve student confidence, decrease anxiety and develop the student's knowledge of what is expected of their FY1 role.

Method:

A teaching curriculum was developed using the Foundation Programme syllabus, junior doctor experience and medical student questionnaires. The course was open to all final year medical students at the University of Bristol. The creators attended accredited teaching courses and content was reviewed with a Teaching Fellow. Feedback was collected to analyse individual sessions and the entire course.

Results:

Six one-hour online teaching sessions were delivered over 12 weeks via Zoom. Cumulative attendance was sixty-three. Mean rating for knowledge of the FY1 job role and confidence in starting FY1 increased by 24% and 46%, respectively. Prior to the course, 70% agreed and a further 26% strongly agreed with 'I feel anxious about starting FY1'. After the course, 64% of participants agreed and 21% strongly agreed that the course made them feel less anxious about starting FY1. 100% of participants would recommend this teaching course to a peer. Qualitative feedback included comments such as, "The salient points relevant to practicalities of FY1 were highlighted- cannot find anywhere else online which would equip me so well". The two creators undertook a dedicated session of collective reflection using the Gibb's cycle once the course had been completed.

Conclusion:

Virtual teaching will continue to be crucial to ensure students are not disadvantaged during the COVID-19 pandemic. The main project limitation was that of modest participant numbers. This project has improved student confidence, knowledge and reduced anxiety; by improving preparedness for FY1, we hope to uphold excellent patient care as a result. A further iteration is planned, and future tutors recruited to ensure project sustainability.

Background

Final year medical students traditionally undergo an assistantship programme, shadowing current Foundation Year 1 (FY1) doctors, at the end of their studies. Assistantships facilitate vital skill learning, confidence building and understanding of what is expected during the FY1 role.[1] Such programmes have been shown to improve medical student preparedness prior to starting paid work.[2] Due to the strain put on the National Health Service (NHS) by the COVID-19 pandemic, medical students have instead been allowed to commence work early in attempt to fortify the available workforce. However, this sacrifices the valuable learning opportunity of shadowing their predecessors. In addition, multiple medical schools have had to cancel final year examinations. As a result, national surveys have revealed that students feel unprepared to start their first year as junior doctors.[3] Furthermore, even prior to the COVID-19 pandemic, many medical students felt unprepared for the transition from academic studies to becoming acute caregivers.[4]

This virtual teaching course was developed as a pandemic-friendly way of delivering crucial information to final year University of Bristol medical students to aid their transition from academic study to the working environment of the foundation programme. The primary aims were to improve student confidence, decrease anxiety and develop the student's knowledge of what is expected of their FY1 role. Ultimately, we aimed to improve patient care that the new cohort of FY1s would deliver, combating the increase in patient morbidity and mortality during junior doctor changeover.[5]

Methods

Course content was balanced between the Foundation Programme syllabus[6] and personal experience as FY1 doctors using an experienced-based learning model.[7] In this way, the developers felt best able to share knowledge of the hidden curriculum of crucial knowledge required by an FY1 doctor that is not necessarily taught at medical school but discovered in real time within a ward environment. Moreover, a questionnaire was circulated to final year University of Bristol medical students to tailor the curriculum to their personalised needs.[8] The creators both attended accredited teaching courses[9] prior to commencing and reviewed the project with a North Bristol Teaching Fellow.

Social media was the primary medium of teaching course advertising, due to its extensive use and engagement amongst our target audience of a student cohort.[10] In addition, an advertisement poster was distributed via the medical school and associated societies, ensuring those without social media were included.

Individual sessions were one hour in duration and accessible to all final year University of Bristol medical students. Six online teaching sessions were delivered over 12 weeks from 22nd February – 1st April 2021 (Table 1) after final year examinations, as this was the most relevant and accessible time. The 'Zoom Cloud Meetings Premium' software was utilised at the unanimous request of the participants ($n = 23$, 100%). In using this software, participants were able to use the advanced features to engage through a

chat function, vote on anonymous polls and ask questions with microphones. The most popular session day and time as voted for by students was implemented to enable the greatest accessibility.

Two presenters attended each session: one delivered content whilst the other co-ordinated questions in the chat function. This resulted in less disruption to the presentation and was positively reviewed by the students. Student participation was encouraged throughout, both verbally and through use of polls. In addition, teaching plans were flexible according to number of participants and their knowledge level.[11]

Table 1
– Teaching sessions

Teaching Sessions
1. FY1 Ward work
2. Surgery as an FY1
3. Medicine as an FY1
4. Palliation and Death
5. Emergencies
6. Prescribing and Final Question & Answer

A combination of lecture-based teaching was combined with interactive case-based scenarios. This enabled the teachers to share crucial knowledge whilst facilitating the participants to solve problems in a similar way as would be expected of them as an FY1. In using Kolb's experiential learning cycle during the feedback form, participants were helped to reflect through their learning and plan how they may implement their new knowledge.[12]

At each session close, participants completed a questionnaire to evaluate the individual session and to record attendance. This included qualitative and quantitative rating of appropriateness of teaching scope, ability to help feeling of preparedness, elements conducted well and areas for improvement. Feedback was also collected prior to and after the teaching course as a whole. This included feelings of preparedness for FY1, knowledge of FY1 job role, sense of anxiety about FY1, what was done well and could have been improved and likelihood of recommending the course to peer.

Results

The total of attendances across the six sessions was 63. Feedback was assessed on a Likert scale from 1 – 5; 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree.

Mean pre-course agreement with the statement 'I have been adequately prepared to transition from finishing medical school to starting as an FY1' was 3.3/5 (neither agree nor disagree). In response to the statement 'I feel anxious about starting work as an FY1', 70% agreed and a further 26% strongly agreed,

whilst 4% neither agreed nor disagreed. Mean attendee rating for 'I know what FY1 entails and what is expected of me' increased from 3.4/5 (neither agree nor disagree) beforehand to 4.2/5 (agree) after completing the course- a 24% increase (Fig. 1.). Mean attendee rating for 'I feel confident in starting FY1' changed from 2.4/5 beforehand to 3.5/5 after completing the course- a 46% increase (Fig. 1.) After the course, 64% of participants agreed and 21% strongly agreed that the course made them feel less anxious about starting FY1, whilst 15% neither agreed nor disagreed. 100% of participants would recommend this teaching course to a peer.

Qualitative feedback was positive for the course in general. Comments for course content included, *"Salient points relevant to practicalities of FY1 were highlighted- cannot find anywhere else online which would equip me so well"* and, *"Covered areas of concerns that medical students have prior to starting FY1."* We collated feedback on teaching style: *"Friendly, approachable and easy learning environment"; "The object of each session was defined and that really gave a sense of progression"; "Enthusiastic teachers using case examples at a good pace."*

Feedback for individual sessions included comments reflecting the unique course content: *"Discussed things no one ever teaches with just the right amount of interaction"; "Good insight into future roles that are not covered by medical school."*

Discussion

It has long been known that FY1s do not feel ready to start as junior doctors after medical school, a feeling that was similarly stated in this project's qualitative feedback.[13] During the COVID-19 pandemic, the more traditional face-to-face teaching that is used to address this knowledge gap has been majorly impacted due to safety concerns.[14] As a result, virtual teaching such as that used in this project will continue to be an important, safe way of delivering education.

Without a dedicated period of shadowing a professional in their upcoming job role, medical students felt uncertain of what their job entailed. Through this online course, with tutors sharing personal experiences and outlining the day-to-day work pattern, knowledge of the job role increased. Similarly in sharing clinical experiences and discussing management of key common cases, anxiety about starting FY1 decreased. As stated in the qualitative feedback, it was very satisfying for both tutors and students alike to be discussing the 'hidden' curriculum: important tips that are not taught at medical school. All predetermined outcome measures improved in this project, via a teaching course that was acceptable and accessible to medical students as indicated by the entire cohort recommending it to a peer. Wider teaching institutions can target a larger audience with a tested method of delivering crucial teaching to ensure students are not left at a disadvantage from the COVID-19 pandemic.

Despite these positive outcomes, there were elements that could be improved for future iterations. The main request was the distribution of teaching slides closer to the end of individual sessions, rather than at the end of the entire course. This would facilitate consolidation of learning at a shorter time interval.

Furthermore, a more efficient advertising method will be utilised in future in the form of a dedicated social media group and event to ensure the greatest reach.

The development of this teaching course was a new and challenging experience. The two creators undertook a dedicated session of collective reflection using the Gibb's cycle[15] once the course had been completed. The strengths, weaknesses and learning points of the project could thus be analysed and an action plan developed for progression. For all involved, the development of this curriculum has been the peak of our teaching achievement and taught us valuable skills as regional educators.

Conclusion

This project has shown an ability to improve student confidence, knowledge and reduce anxiety and thereby achieved its primary aim. By improving the student experience and preparedness for the transition to becoming FY1 doctors, it is hoped that we might uphold the highest level of patient care as a result.[16] An edited version of the teaching curriculum is planned to be recorded for the upcoming FY1 cohort. In addition, current FY1s are being recruited as teachers to enable the teaching to remain current, personalised and sustainable on a yearly basis.

List Of Abbreviations

FY1- Foundation year 1

Declarations

Ethics approval and consent to participate: the feedback questionnaire was anonymous and included no sensitive data, and so no ethical approval was required. Participants gave informed consent prior to completing voluntary feedback forms. All methods were performed in accordance with relevant medical education guidelines and regulations.

Competing interests: No potential conflicts of interest.

Funding: No external funding was granted. The online teaching software was a free service at time of use.

Consent for publication: not applicable.

Competing interests: nil.

Availability of dataset and materials: The datasets analysed during the study are available from the corresponding author on reasonable request.

Author's contributions: NB and WH are jointly responsible for the initial idea, development of the curriculum, delivery of several teaching sessions, presence at all teaching sessions and contributing to

the project write-up and analysis.

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Figures

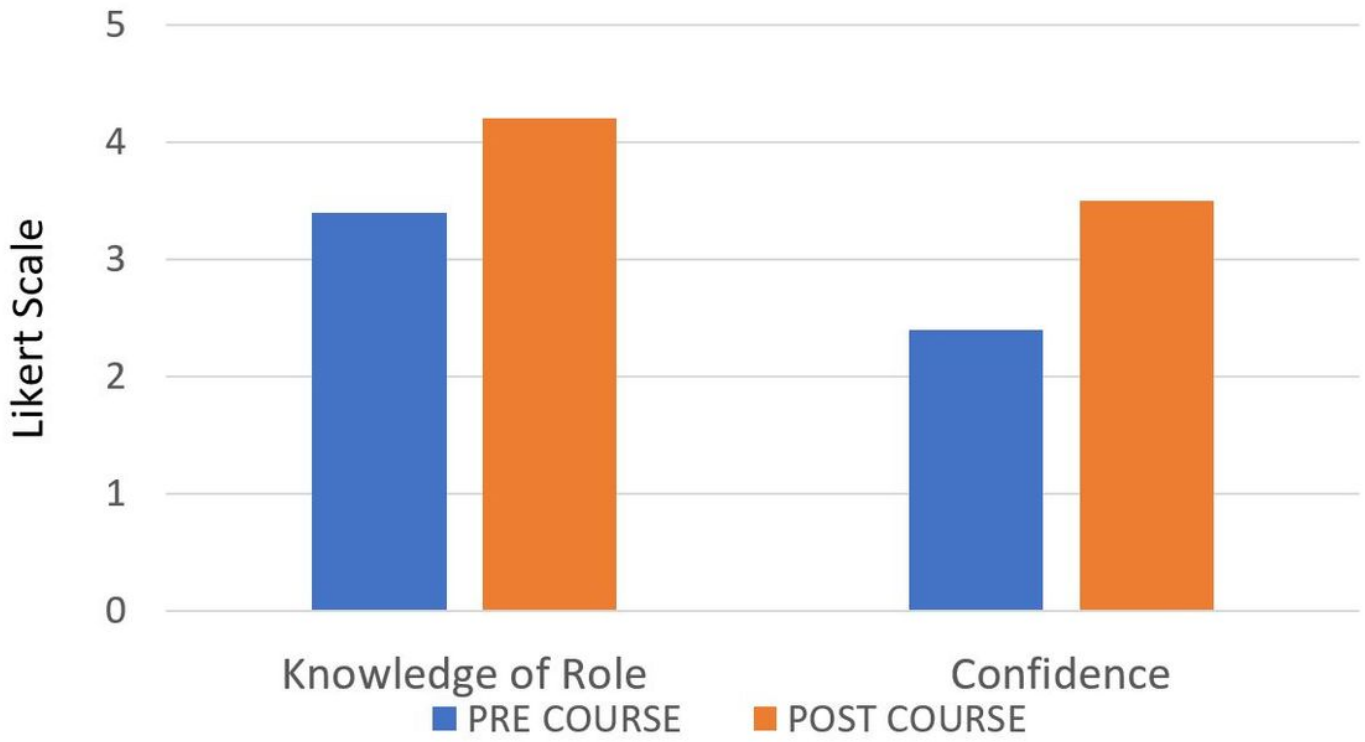

Figure 1

Change in student confidence and knowledge of FY1 job role before and after the teaching course.