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March 2018

Volume 15

Issue 1

Doctors Academy Publications

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WJMER

World Journal of Medical Education and Research

An Official Publication of the Education and Research Division of Doctors Academy



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DOCTORS ACADEMY



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ISSN 2052-1715



Improving Medical Students' Preparedness for Post-Graduate Practice: A Supplementary Teaching Programme

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WJMER, Vol 15: Issue 1, 2018

Abstract

Background: Evidence shows that medical graduates feel unprepared for their foundation years, particularly when managing acutely unwell patients.

Aim: To improve the confidence and feeling of preparedness amongst final year medical students for post graduate practice and specifically the role of the foundation doctor.

Method: Using a Likert scale, students were asked to rate their confidence with regards to different areas of practice. 90% of students felt unprepared and 40% felt that medical school had not adequately prepared them for post-graduate practice; particularly on call shifts. Following this we designed an 8 session teaching programme specifically to improve confidence surrounding the role of the foundation year 1 doctor on call. Using didactic lectures, low fidelity simulation and small group teaching sessions covered clinical tasks and non-technical skills.

Results: Whilst students remained anxious, 50% felt more prepared and confident. Students felt the course addressed areas not readily covered in their formal teaching.

Conclusion: There is a need for further teaching focussed around on-call tasks specific to the role of the foundation doctor to be incorporated into formal teaching programmes. This will reduce anxiety around this transition and ensure foundation doctors feel both adequately prepared and clinically supported.

Key Words

Education; Training; Quality; Safety; Curriculum Design

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Introduction

There is evidence that many medical graduates feel unprepared for their foundation years; particularly with regards to managing acutely unwell patients and the non-technical skills that this complex process involves¹. The GMC conducted a survey in 2009 which found that 1 in 10 UK medical graduates felt poorly prepared, leading to concerns as to whether new graduates are safe to practice². One study found there was a 6 % increase in patient mortality when new doctors start work in the NHS^{2,3}.

There is some evidence that students from Problem - based learning (PBL) courses feel better prepared for their foundation years compared to students from more traditional courses, particularly in relation to practical and communication skills⁴, however further research has identified that students from multiple medical schools and course types continue to feel unprepared for their foundation years⁵.

Perceived preparedness can influence the behaviour

of new graduates and the potential impact upon patient safety and emotional wellbeing of graduates is of paramount importance⁶. Medical educators must ensure that specific areas of weakness are targeted to ensure this transition is effective, students feel supported and high standards of care are maintained.

Aim

To implement a course to directly improve final year medical students confidence with regards to starting FY1 (Foundation Year 1). To equip them with essential skills for the role of the FY1 on call, specifically the assessment and management of an acutely unwell patient, time management, task prioritisation, communication and handover.

Method

Survey and focus groups

We conducted a survey amongst 10 final year medical students from Newcastle University on placement at a District General Hospital for their final year of undergraduate study. We aimed to identify any concerns they may have with regards to

starting their foundation years and highlight specific areas of weakness that they felt they needed to improve upon prior to starting their Foundation Year 1. In addition to small focus groups, a questionnaire was conducted using the Likert Scale and students were asked to rate their confidence with regards to a variety of tasks essential for their foundations years.

Survey Results

70% of students felt anxious about commencing FY1 and 90% felt unprepared. Only 40% felt that medical school had adequately prepared them for starting FY1. Areas causing most anxiety included managing acutely unwell patients, interpreting x-rays and procedural skills. Only 20% felt confident interpreting x-rays and no student felt confident placing a nasogastric tube or performing an arterial blood gas sample.

Non- technical skills such as the process of handover and asking for help were also of significant concern (*Figure 1*). Only 40% of students felt confident asking for help and only 30% stated they felt confident with the process of handover. 50% felt they were aware of what information was required to be placed in a discharge letter.

Developing a programme

Based on these results, we designed an 8 session teaching programme over a period of 16 weeks. The programme started in January, 6 months into their final academic year. These sessions supplemented their formal final year teaching on areas where students lacked confidence and not readily covered during their traditional medical school course. In addition to the 8 teaching sessions, themes ran through all the sessions and were built upon as the course progressed, specifically designed to improve confidence during on call shifts including; time management, task prioritisation, the process of handover and communication. Sessions were taught using variety of methods including didactic lectures, small group work and low fidelity simulation.

Teaching Sessions

- Session 1: ABG interpretation (using cases including respiratory and metabolic disorders)
- Session 2: Practical prescribing (relevant to the role of FY1 on call including analgesia,

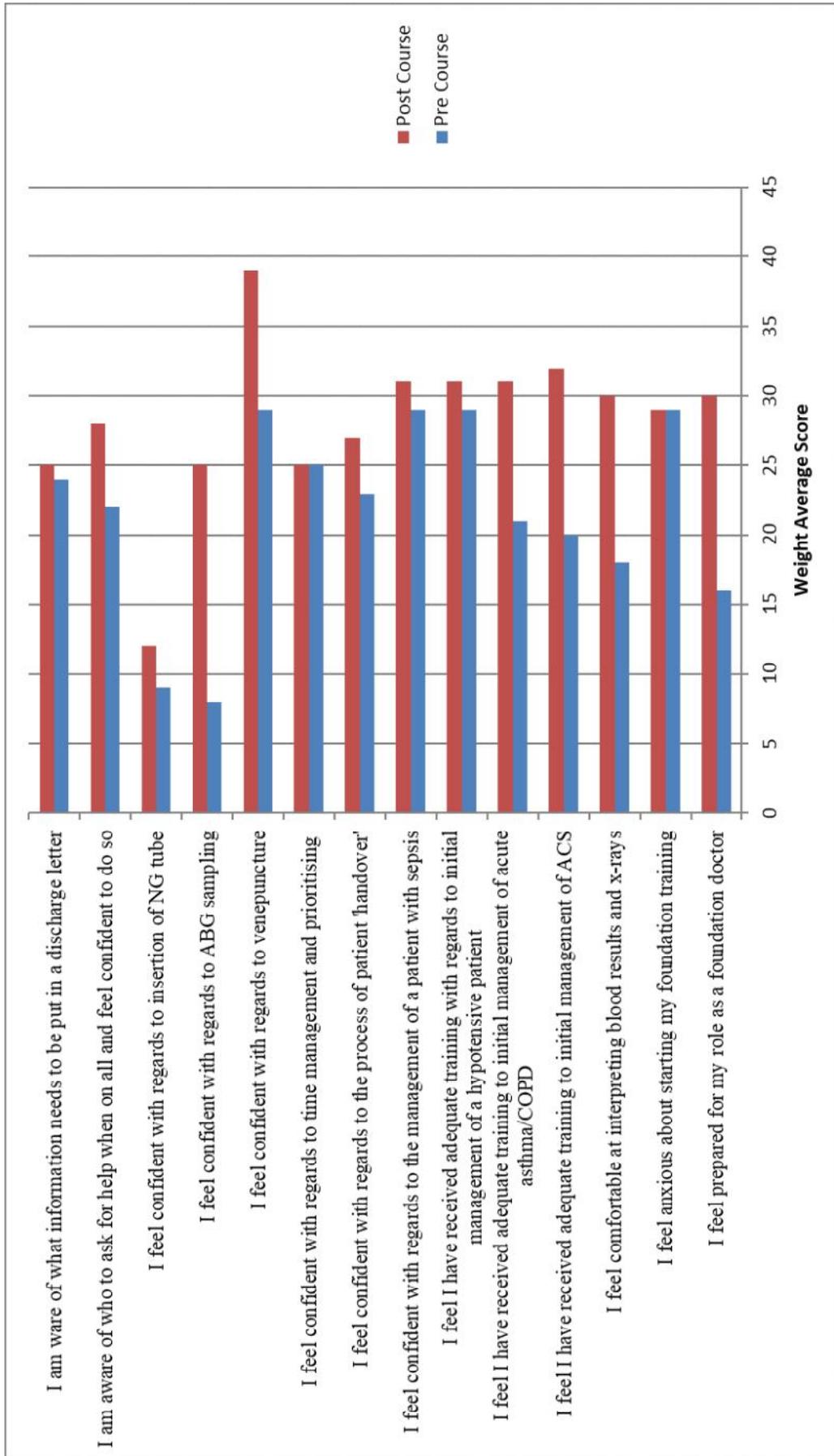
antibiotics, fluids, insulin, warfarin, electrolyte disturbances)

- Session 3: Radiology (interpretation of common chest x-rays and abdominal x-rays).
- Session 4: Blood test interpretation (commonly encountered issues on call such as rising inflammatory markers, abnormal liver function tests, acute kidney injury, electrolyte disturbances and markers such as D-dimer and troponin)
- Session 5: Acutely unwell surgical patient simulations (acute abdomen) including task prioritisation and handover/ referring to another speciality.
- Session 6&7: Acutely unwell medical patient simulations (asthma exacerbation, acute coronary syndrome including ECG interpretation, septic shock and GI bleed) including task prioritisation and handover/ asking for help from a senior.
- Session 8: Clinical signs teaching relevant to acutely unwell medical patients.

Results

Over the 16 week course, students gained confidence, with 50% feeling significantly more prepared and confident with regards to their role at the F1 on call. 80% felt confident asking for help and knew who to ask for help as opposed to 40% prior to the start of the course. 80% felt confident with regards to the process of handover; a 30% increase compared to the pre-course survey.

The chart below (*Figure 1*) shows a calculated weighted average score for each point; 4= strongly agree, 1= strongly disagree. This demonstrates a significant increase in confidence in most areas, particularly in terms of their preparedness for FY1 and important non-technical skills including, handover and the process of asking for help; particularly reassuring in terms of improving patient safety. There was also a significant improvement with regards to managing acutely unwell patients, procedural skills and interpreting x-rays. Interestingly, students remained very anxious with regards to starting FY1 and there is no demonstrated improvement in confidence with regards to time management and task prioritisation. Further research is required to explore this further.



Qualitative Feedback Comments

What specific areas do you feel you have gained confidence in since undertaking this course?

- "Interpreting bloods & x-rays – thank you!"
- "Using the SBAR handover tool and escalating concerns"
- "Blood interpretation, A-E assessment and X-rays"
- "Prescribing common drugs/fluids"
- "Handover and being helpful on a ward/ understanding my future role as an F1"
- "Thanks to the teaching I am confident in my abilities and think it will help me quickly settle in as an F1"
- "There wasn't any specific area but has generally helped a lot by acting as extra practice alongside our regular teaching"
- "Communication, A-E assessments and interpreting bloods/x-rays"

Discussion

Students felt unprepared for their foundation years and experienced significant anxiety prior to this course, 6 months before commencing their foundation year 1. Students expressed particular concerns regarding the acute management of patients, interpretation of x-rays and procedural skills. Interestingly, students felt confident with regards to managing sepsis and hypotension prior to starting this course, but felt less confident managing acute coronary syndrome, exacerbations of chronic obstructive pulmonary disease and asthma.

Following this course there was improvement in confidence in most areas. Unfortunately, our results show that there was no demonstrated improvement in confidence with regards to task prioritisation or handover and students remained anxious with only 50% feeling prepared and 80% feeling anxious.

One possible reason for this continued anxiety and feeling of being unprepared is the time of year in which the survey was repeated, just prior to commencing their FY1. However, at this point students have completed final year and passed their final exams and therefore, should feel confident and capable of performing FY1 duties.

The solution?

The findings of this small study correlate with previous research conducted amongst new graduates. Since the report by the GMC in 2009 there appears to have been little improvement. Anxiety amongst medical students and foundation doctors is widely reported⁷ and this cohort of students at the interface between university and

significant responsibility in their first year of practice are a vulnerable group⁸.

Burnout is a common problem in the UK amongst new graduates and has the potential to have a negative impact upon patient safety⁹. If we do not take targeted action, there could be a substantial impact upon patient safety as well as doctors' mental health and wellbeing with a subsequent impact on recruitment and retention.

Lachish⁹ found that good support for foundation doctors promoted work place satisfaction and encouraged retention of doctors. Research has found that longer periods of shadowing significantly reduced levels of anxiety surrounding the transition from student to doctor^{1,11}. Students valued most a period of shadowing¹².

There is a need to better prepare medical students for their FY1. Our study suggests this could be achieved with more targeted teaching, aimed at providing them with the specific skills they require as well as improving their confidence and feeling of preparedness. Perhaps a prolonged period of internship attached to a ward post exams may be of benefit, which would provide an opportunity for students to gain hands on experience in an apprenticeship like role?

Limitations

There was noticeable improvement in procedural skills including arterial blood gas sampling and nasogastric tube insertion; areas not directly covered during this course. This therefore leads to the question: was this course directly responsible or would students have achieved this level of self-confidence and feeling of preparedness via their formal teaching programme? Qualitative feedback was overwhelmingly positive and would suggest otherwise. This course was felt to be of significant additional value by students, and results correlate with previous research in this area, where more hands on experience positively influenced perceived preparedness⁵.

A further possible limitation is that the results are based on students self- perception of their ability and skills rather than objective assessment. However, previous research found that students self - perception of their ability was inline with the opinion of their supervisor¹³.

Conclusion

Following this course there was evidence of improved confidence amongst the final year medical students with regards to most areas. Despite this course however, students remained anxious with

regards to commencing their foundation years. Further research is needed to explore whether similar courses are directly responsible for this improvement in confidence and there is a need for further research to identify why despite this additional focussed teaching programme, a significant number of students still feel unprepared. Subjective evidence however, demonstrates that students felt this course was of added value and our findings correlate with data collected from across the UK. Feedback was overwhelmingly positive and students gained confidence in areas specific for the role of the FY1 on call, not readily covered in their formal teaching programme.

In this small but positive study, we have highlighted a need for further teaching and experience focussed on on-call tasks specific to the role of the FY1 in order to ensure foundation doctors feel supported and adequately prepared for post-graduate practice. Ideally, this should be incorporated into formal teaching programmes, with particular emphasis on acute care. Further research is required to identify when in the traditional teaching programme this course would be best placed.

Main messages

- There is significant anxiety amongst final year medical students with regards to starting their foundation years.
- Students are particularly concerned about on call shifts and managing acutely unwell patients.
- A teaching programme designed specifically to address on call issues and common tasks can improve confidence
- There is a need to incorporate teaching specific to the role of the foundation doctor into formal medical school teaching programmes.
- Further research is required to identify the most appropriate teaching methods to prepare doctors for post-graduate practice and when within their academic year this is best achieved.

Notes on the contributors

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Dr K Nurse and Dr T Jones contributed equally to this paper.

Acknowledgements

The authors would like to thank the students and faculty at Darlington Memorial Hospital for their support with this project.

Declaration of interest: The authors report no declarations of interest. The authors alone are responsible for the content and writing of the paper.

Ethical Approval: Ethical approval was not required. All students gave verbal consent, all answers were anonymous and participation was voluntary with students free to leave the course at any time.

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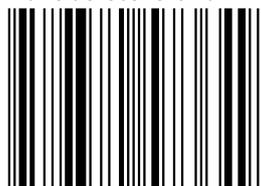


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World Journal of Medical Education and Research

An Official Publication of the Education and Research Division of Doctors Academy

ISBN 978-93-80573-64-9



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