THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH

The Faculty of Surgical Trainers

ASSOCIATION FOR THE STUDY OF MEDICAL EDUCATION

FST/ASME Educational Research Grant Report 2016 - 17

Paul Sutton

FST/ASME Educational Research Grant Report 2017-18

RESEARCH GRANT RECIPIENT

Paul Sutton

DEPARTMENT

1) Department of Medical Education, University of Dundee
2) Department of Medical Education, University of Liverpool
3) Department of Surgery, Wirral University Teaching Hospital NHS Foundation Trust

PROJECT TITLE

Exploring clinical decision making amongst surgical trainees in a simulated environment

SUMMARY

Background:
Clinical decision-making is a relatively poorly understood non-technical skill, but one which is essential to surgeons both in and out of the operating theatre. We undertook an exploratory pilot study to help better understand clinical decision-making in an acute clinical setting, specifically the assessment and management of a critically ill surgical patient.

Method:
The study utilised a simulation suite, with participants undertaking a pre-defined scenario which was filmed. After the scenario, the participant watched the video with the investigator and their performance was evaluated using a style of interviewing known as teach-back.
The transcripts of these interviews were analysed using standardised qualitative techniques to explore behaviourism with respect to decision making.

Conclusion:
Our data fits well with what is already known on this topic. Four approaches to decision-making have previously been described: intuitive/recognition-primed, rule-based, analytical and creative. Our work has shown that the approach to decision-making chosen by the individual is a function of information processing and strategy, both of which may be influenced by their personal attributes and the generic professional skills they possess. The data analysis is not as yet complete, and the project is ongoing.

RESEARCH GRANT REPORT

A) Clinical and Scientific Significance of Advances Made

Methods:

Ethical approval was obtained from the University of Liverpool. Surgical trainees were invited to attend a simulation suite where they were presented with a clinical scenario of an acutely unwell post-operative patient. The assessment and management of the scenario was filmed, and a teach-back interview undertaken with a single interviewer (PS). The teach-back recording was transcribed and thematically analysed for emergent themes with respect to clinical decision making.

Results:

Fifteen trainees completed the scenario and participated in the teach-back interview. A total of 321 quotes were extracted which were each allocated up to 4 codes, with a total of 513 codes attached. Thirty-eight unique codes were identified with a prevalence of 1 to 39 occurrences. Themes identified were: 1) Personal Attributes, 2) Generic Professional Skills, 3) Information Processing, and 4) Strategy.

Discussion:

Four approaches to decision-making have previously been broadly described: intuitive/recognition-primed, rule-based, analytical and creative. Our data suggest that the approach taken is a function of information processing and strategy, both of which may be influenced by personal attributes and generic professional skills.

B) Problems Encountered and Steps Taken to Overcome Them

Two problems were encountered in the delivery of this project:

Recruitment of participants

This ultimately proved difficult as, despite making the request not to, one of the first participants discussed the project with a number of his colleagues. Inviting these individuals to then participate would no doubt have skewed the data. Furthermore, it became apparent that doctors were unhappy about the idea of their performance being recorded. It was possible to get around these problems by recruiting a bit further afield, and also ensuring it was clear to those potentially interested in participating in the study that the videos would be deleted upon completion of the project.

Data analysis

In total, fifteen participants were recruited to the study. The volume of data that this generated by coding the transcripts was greater than anticipated. As such the project has become delayed, and required a number of additional unscheduled telephone meetings of the co-investigators to ensure that the data analysis being performed was appropriate to the original research question.

C) Collaborations Established

This project has required collaboration between the medical education departments of the Universities of Dundee and Liverpool. The simulation suite at Arrowe Park was in its infancy and has benefited through this project by collaboration with the surgery department at the same hospital, and a more well-established simulation suite at nearby Aintree Hospital.

D) Publications and Presentations

To be presented at the Association of Medical Education Annual Meeting June 2017.

Data analysis ongoing and simultaneous preparation of a dissertation to be submitted later this year to the University of Dundee for the degree of Master of Medical Education. Manuscript to follow.

E) Acknowledgments

Co-Investigators:

Vikram Jha - University of Liverpool (Supervisor)
Stella Howden - University of Dundee (Supervisor)
Vidhi Taylor Jones -Aintree Hospital, Consultant Anaesthetist and Simulation Lead
Alastair Gilmore -Arrowe Park Hospital, Consultant Acute Physician and Simulation Lead
Jeremy Wilson - Arrowe Park Hospital, Consultant Surgeon

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