

CAREER OPPORTUNITIES IN SPACE MEDICINE:

Have Medical Students' Awareness Increased Since the First UK Space Medicine Conference?

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Introduction

Space medicine is defined as 'the medical science of the biological, physiological and psychological effects of space flight upon humans'¹.

To date more than 240 human space flights have been completed, involving around 450 astronauts from various countries. This gives a combined total presence in space of more than 70 years². During this time much research has been carried out on both human and animal models. These include the study of:

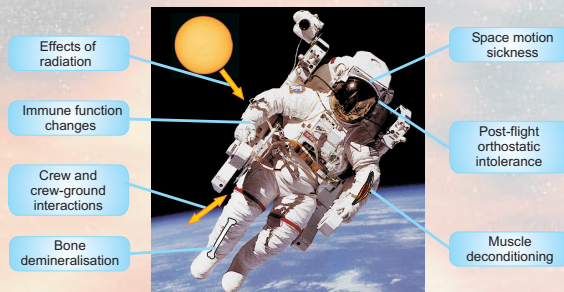


Figure 1: Research areas in space medicine (image adapted from Berger³).

The research has led to the fundamental understanding of the adaptation of the human body to the space environment. It is a massively expanding field with an estimated additional spending of \$12 billion by the White House over the next five years⁴. Although space medicine is at its infancy, it is here to stay.

A vision of exploration of Mars captures the imagination of the general public and scientific society. Many physiological, psychological, operational and scientific issues need to be addressed before the first human can set foot on the Red Planet⁵. Thus leading to the growing career opportunities in this dynamic and exciting field. Now is the time to look at the future of human spaceflight and what comes next.

Aims

The aim of the study is to see if medical students' awareness of career opportunities in space medicine has increased since the first UK Space Medicine Day, 2004.

Methods

A questionnaire (Figure 2A) was completed by 100 medical students before the first UK Space Medicine Day and another 100 medical students thereafter. The second 100 students were given two articles about space medicine to read (published in the student BMJ^{6,7}) followed by additional questions to answer.

Space Medicine: Awareness and Career Opportunities for Medical Students
QUESTIONNAIRE

PART 1

1. Name _____

2. Age _____

3. Year of study 1 2 3 4 5

4. Gender Male Female

5. Are you a post-graduate medical student? Yes No

6. Have you ever come across the term 'space medicine'? Yes No

7. Do you know anything about space medicine? Yes No

8. If so, from where did you learn about space medicine? (Media (specify), Medical journal, Special Study module, Conference, Family/Friends, Space Medicine Conference, Other (specify))

9. Have you considered a career in space medicine? Yes No

Please read the Space Medicine articles from the student BMJ^{6,7}

PART 2

10. After having read the articles, would you now consider a career in space medicine? Yes No

11. Why? _____

Thank you for completing this questionnaire which is to be used to study the awareness of space medicine and possible career opportunities in this field for medical students in the UK.

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Figure 2A. Questionnaire



B. Space medicine information^{6,7}

Results

The medical students questioned were from year 1 to 5, with a small minority being post-graduate students. The average age was 23 years in both groups and there were roughly equal distribution of male and female students in both groups (2004 group had 48 M, 52 F; 2005 group had 51 M, 49 F). Before the first UK Space Medicine Day conference 17% of students knew something about space medicine, this increased to 44% after the conference (Figure 3A).

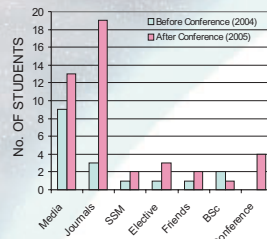


Figure 3B. Where did you learn about it?

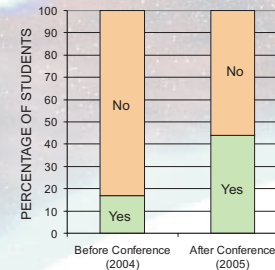


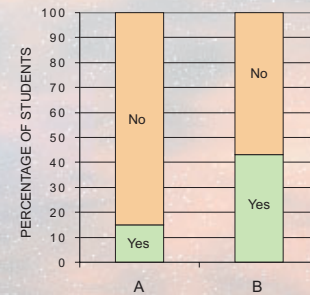
Figure 3A. Do you know anything about space medicine?

Of those that knew about space medicine before the conference, over half had learnt about it through the media (9 students).

However, the largest educating factors after the conference included medical journal (19 students) and the media (13 students), followed by the first UK Space Medicine Conference (4 students) (Figure 3B).

Under a sixth (15%) had considered a career in space medicine before reading the space medicine articles. This increased to 43% after the students had read the information sheet.

Figure 4A. Have you considered a career in space medicine? B. After having read the articles, would you now consider a career in space medicine?



Discussion

Space Medicine is a super-specialised field and so understandably is not part of the core undergraduate medical curriculum. The study has shown that since the first UK Space Medicine Conference, awareness of the subject has massively increased from 17% to 44% being aware of career opportunity in space medicine. Before the conference most students learnt about space medicine through the media. Since then other educating factors included medical journals and the conference itself.

It was shown that after students were briefly educated about space medicine, there was a two and a half fold increase in the number that would consider a career in this field. The results suggest that most students do not consider a career in space medicine because of the lack of awareness of the subject. However, over the last year since the first UK Space Medicine Conference better publicity has led to a greater number of students considering it as a career opportunity.

“Education is not filling a bucket but lighting a fire”

William B. Yeats

Acknowledgments

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