

STUDY PROTOCOL

XTRA study protocol: eXploring medical sTudents' caReer reAdiness—a cross-sectional study in the UK

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Abstract

Background and objectives: Professional and career enhancing opportunities are essential for developing skills required for a successful career in medicine. Research to date has mainly focused on the extent to which medical schools prepare students for clinical work as junior doctors. However, there remains a need to ascertain how students prepare for their career and what facilitates or hinders learning regarding careers in medicine. The purpose of the XTRA study is to examine career readiness of medical students at UK universities and the support they receive during their studies regarding career planning. **Methods:** The eXploring medical sTudents' caReer reAdiness (XTRA) study is a national cross-sectional study of all medical students enrolled at a UK medical school. Data collection will occur via a secure online survey designed as a training need analysis based on the principles of Super's theory (Super, 1953) of career development. A snowball sampling strategy will be used to recruit participants via social media and networks. Results will be analysed using quantitative analysis and thematic analysis to identify themes in qualitative responses. The primary outcome is to understand the perspective of current medical students on how well prepared they are about entering their careers in healthcare. **Conclusions:** We anticipate that findings from this study will help identify career readiness of medical students to facilitate the development of career development programmes and resources to ensure medical students are well equipped for their future careers.

INTRODUCTION

Background

Every medical school aims to ensure that all students, at the time of graduating, are ready to start work as medical practitioners. The current literature contains a number of studies that evaluate medical students' preparedness to practice [1], however, little has been studied about medical students' career readiness. To have a strong medical career it is important to engage in personal development and seek all available opportunities which are important in improving a practitioner's portfolio, and developing skills needed to be a doctor [2]. Early consideration of postgraduate career preparation and helpful medical school career guidance has a strong association with perceptions of preparedness of medical graduates for hospital practice [3]. Thus, it is important to gauge how knowledgeable medical students are about career

development so that any inadequacies can be addressed. This would help ensure that junior doctors feel prepared and confident about their future, giving them the freedom to make decisions and engage in the best career opportunities for them.

Understanding the requirements for a career in medicine and the opportunities available for a desired trajectory is essential [4]. For example, familiarization with medical career pathways, networking with other professionals, and understanding the financial aspects of a doctor's life (such as taxes and pensions) are examples of essential aspects aiding students' personal development. These factors are crucial to decide the paths students will take [5, 6]. Students will therefore require support on how to develop a professional career in medicine, gaining experiences with teaching and leadership, engaging in research and entrepreneurship,

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attending conferences and courses, and using social media effectively. Many of these are important components of a medical portfolio, which are needed for applications for training and career progression [7–10].

Having a structured career plan can aid understanding of the skills that need to be developed in a logical time frame, and early career planning has many potential benefits, including better work-life balance [11]. Super's theory of career development [13, 14] offers some valuable insight into a career coaching structure with three phases: (i) Crystallization (self-assessment of the medical student's needs, values, competencies and opportunities), (ii) Specification (establishing preferences regarding specific vocation and career pathways) and (iii) Implementation (training and making efforts to establish a specified career goal) [12–14]. This highlights a potential career preparation model that could be relevant to UK medical practitioners, emphasizing how career coaching would allow students to develop their career continuously throughout their lives. In our context, the utilization of the Communities of Practice elements as proposed by Lave and Wenger [15, 16] associated with the concept of Hidden Curriculum as proposed by Hafferty and Franks [17, 18] can also offer a powerful tool to explore and understand how medical schools, role models/mentors and medical communities are influencing personal and professional development of medical practitioners.

Purpose

There is ample evidence to suggest that supporting medical students' career development can benefit them individually, as well as the medical profession as a whole [2, 4, 8, 10, 11]. Given the importance of such attributes, there is a need to evaluate how students are learning about the process of career readiness and which resources are facilitating or hindering their learning regarding careers in medicine. The XTRA study is therefore a needs assessment and to this end it sets to examine the extent to which students who are currently studying at UK universities feel ready for their career and the opportunities they have to enhance knowledge about career planning [19]. Findings will help formalize, highlight, and establish the basis of subsequent planning, as well as examine whether there is a need to address these requirements in more formal methods to form a routine part of training.

METHODS AND ANALYSIS

Research questions

The XTRA study will address three main questions:

- 1) To what extent do current medical students feel ready about entering their careers in healthcare?
- 2) Which facilitating factors and barriers can influence medical students' readiness?

- 3) Are there sufficient resources provided by medical schools, external training and mentoring to prepare medical students for different stages in their careers?

Outcome measures

i) Primary objective

- To evaluate the perspective of current medical students on how well prepared they are about managing and developing their careers as medical practitioners.

ii) Secondary objectives

To identify:

- Factors that have facilitated medical students' development in their careers.
- Barriers medical students face toward developing their careers.

To investigate:

- The extent to which medical students have had access to support and resources provided by medical schools, external training and mentoring in order to prepare for the different stages in their careers.

To aid:

- Educational planning to improve students' readiness to enter the medical profession.

Anticipated outcomes

We anticipate that this study will aid in recognizing areas that medical students would like further support on, which will help in the development of future career development programs and resources.

Study design

The XTRA study is a cross-sectional questionnaire-based study.

A secure online questionnaire has been created and hosted via the Microsoft Office Forms database that is supported by Medical Education from the School of Medicine at Cardiff University [20].

The questionnaire consists of 20 questions (refer to [Appendix 1—Survey](#)). Participants will be asked for their age and gender, the stage of medical training they are in and their respective universities to capture sample characteristics information. The focus will be on asking participants their opinions on how much they have been supported throughout medical school in several areas of professional development. This will then be followed by their opinions on which resources could aid them into improving their preparation for medical professions.

The first part of the questionnaire has been developed by the researchers based on the principles of Super's

theory of career development [13, 14]: it is divided into (i) Crystallization (questions about the participant's needs, values and competencies), (ii) Specification (questions regarding career pathways, as well as administrative and financial aspects relating to a medical career) and (iii) Implementation (questions about the skills and efforts they have been making toward the career of a doctor). A focused review of the literature has been conducted to establish which factors asked in each of the sections mentioned are beneficial to a doctor's career. For the Implementation section in particular, questions have been designed to compare the participant's knowledge on specific areas and how well they have implemented this into achievements. This can provide useful insights into whether the perceptions and awareness of career readiness is linked to engagement in actions contributing to the development of a medical career.

The second part of the questionnaire focused on the guidance these students have had from multiple resources (formally and informally) as well as facilitating and hindering factors that impacted their level of readiness. This can allow better understanding of the extent of career support received by medical students and suggest future avenues for improvement.

A pilot study of 18 students was performed to ensure questions were unambiguous, and focus group discussions and a cognitive interview was conducted to construct face validity within the questionnaire.

Study population

Medical students, who are defined as students currently studying medicine or on a preclinical/foundation part of a medical degree where a medical degree is guaranteed upon successful completion of their degree.

i) Inclusion Criteria

- All UK or international medical students currently enrolled at a UK Medical School.
- An International student is defined in this study using the definition of the UK Council for International Student Affairs (UKCISA) as Non-British students (full-time or part-time in education); OR students whose normal residency is not in the UK and are regarded as students with Overseas/International fee status

ii) Exclusion Criteria

- Participants who are not fluent in the English Language.
- Non-medical students.
- International medical students who are not studying.
- Medical students from a university that is not recognized by the GMC.

Data collection and analysis

i) Data Collection

A poster will be shared on social media platforms (including Facebook, LinkedIn, Instagram and the company website) to reach medical students from each UK medical school. This poster will explicitly express the need for medical students to partake in the study including a link to the online form for participation. The survey will also be shared through personal contacts. Participants will only be allowed to complete the form once to avoid multiple submissions. Once the questionnaire is completed, participants will also be given the option to invite three medical student colleagues to participate in the study (via a snowball approach).

ii) Data Analysis

This study will follow the STROBE cross-sectional study guidelines [21]. Data will be analysed through quantitative and qualitative methods. Factor analysis and coefficient alpha will be used as statistical methods to analyse the validity and reliability of the newly generated questionnaire. Descriptive statistics and quantitative data will be analysed through descriptive analysis and through correlations. We will qualitatively analyse data using thematic analysis to identify themes within the free text responses [22].

Authorship

Authorship guidelines from the National Research Collaborative will be followed on all research outcomes [23]. The main researchers of the steering group will be listed as coauthors. There is a mandatory requirement for all coauthors to have an ORCID ID. Provided minimum requirements for authorship are met, individuals involved in the recruitment of participants will be listed as collaborators in the study. The criteria for collaborative authorship are to disseminate the survey at least once weekly through the various methods mentioned in this protocol, and to also have an ORCID ID.

Ethical considerations and dissemination

This study is conducted by Cardiff University, and has been reviewed and approved by the Cardiff University Research Ethics Committee (Reference: SMREC 21/86). We anticipate that the results of this study will be published in a peer-reviewed medical or scientific journal.

We will submit the findings of this project using posters and oral presentations to national and international conferences pertaining to medical education and career development.

FUNDING

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AUTHORS' CONTRIBUTIONS

AG and MT were responsible for conceptualization. AG, FV, CC, TY, MM, KA and AM were responsible for writing the protocol and first draft. All authors were responsible for writing the second draft. AG, MT and MHVB were responsible for study design. MM, CC and FV were responsible for leading the data collection. All authors were responsible for data collection. The contributions from PRB, ST and KB were solely data collection in accordance with collaborative authorship criteria. All authors were responsible for revisions. MT was responsible for supervision.

CONFLICT OF INTEREST STATEMENT

None to declare.

SUPPLEMENTARY MATERIAL

Supplementary material is available at JSPRM Journal online.

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