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Short Report

Factors that Influence the Career Choices of Pharmacy Undergraduates

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***Background*: The Clinical Pharmacy Practice (CPP) course at the University of Manchester ensures students have hospital practice exposure in order to make informed career choices. This study explored influences on career choices and the impact of the CPP course.**

***Methods*: Two questionnaires investigated career decisions, factors influencing these and attitudes towards careers.**

***Results*: Questionnaires were collected for two consecutive year groups. Ninety-five (57%) students had made career decisions at the end of their third year. Previous work experience and the CPP course were the largest influencing factors. Starting salaries were perceived as poor in hospital although opportunities for further education and professional development were perceived as better in this sector.**

***Discussion*: Career information may be best provided by Schools of Pharmacy. Follow-up studies with pre-registration graduates and newly qualified pharmacists are planned. Information will be sought about career expectations, satisfaction and reasons for changing jobs.**

Keywords: Career choice; Education-pharmacy; Pharmacists; Undergraduate

INTRODUCTION

Career Options for Pharmacy Undergraduates

In the United Kingdom (UK), undergraduate pharmacy students frequently have to decide in which sector of the profession they wish to undertake their pre-registration training before the start of the final year of their course. This decision is significant, as it is likely to influence and shape the early part of the student's professional career. It is therefore important that each student receives sufficient experience and adequate information to enable them to make an informed choice.

Students currently have several options regarding where to undertake their pre-registration training. Fifty-two week training positions are available in both the hospital and community sectors, as well as a smaller number of split placements in different sectors, for example hospital plus community and industry plus hospital. There are therefore relatively few pre-registration places that allow students to work in more than one sector if they have not made a definite decision about which career path to follow. The advent of the performance standards based pre-registration training with its crossover placements will give all students two weeks' experience of working in the opposite sector. However the value of the crossover placements in helping students to make career decisions and the effectiveness of the two-week duration is currently unknown. The most appropriate time for students to make preliminary career choices is therefore likely to be before the start of their pre-registration training. For this reason, there may be a need to provide more career information to undergraduates than is currently available.

Practice Experience for Pharmacy Undergraduates

Students may use a wide variety of experiences and information sources to enable them to make

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decisions about their future careers. Pharmacy undergraduates are encouraged to seek vocational work experience from an early stage in their course and Schools of Pharmacy also offer career information to students. This is both informally through practicing pharmacists and formally through taught material, presentations and by hosting career road shows.

Many students have completed vocational training in community pharmacies and teacher practitioner posts funded by community pharmacy organisations exist in all UK Schools of Pharmacy in order to promote this sector of the profession. The interactions of these practitioners with students throughout the course enable them to arrange placements and provide information about careers in community pharmacy from an early stage.

Many Schools of Pharmacy have included hospital visits for students in the final year of their undergraduate course, often too late in the course to influence students' choice of pre-registration training. Students who do not actively seek vacation placements in hospital practice may have no experience of this sector and may not consider it as a career option.

The University of Manchester introduced the Clinical Pharmacy Practice (CPP) course to the new four-year M.Pharm. degree in 1999. This was against a background of continuing recruitment and retention problems within the profession and an opportunity to make syllabus changes with the transition to a four-year degree programme. The course was developed to improve the practical and patient-based content of the course and to complement lecture-based clinical teaching. It was also recognised that the course would help address deficiencies in work experience by ensuring that students had exposure to practicing pharmacists from secondary care. Hanning *et al.* (2002) describe this new approach to Clinical Pharmacy Practice teaching using a Clinical Tutor model and report the results of an evaluation of the first year of the course. The CPP course is integrated into the third and fourth years of the M.Pharm. course and is a compulsory, assessed part of the degree for all students. Its aims are to provide students with practical experience in the basic principles of common disease processes and rational drug therapy and to further develop their communication skills in a working environment. The course also aims to increase students' exposure to pharmacy practice in the hospital setting and provide an environment where students can consider different career options. Each student receives around 60 h of tutorial style teaching at one of three teaching hospitals over the two-year period. In the early part of the course, students learn about the work of the hospital pharmacy team and Primary Care Trust pharmacists and then participate in clinical case-based sessions where they interview patients, take drug histories and examine case notes.

Factors Influencing Career Choice

A wide variety of factors are likely to influence the career choices of pharmacy undergraduates. Studies in America (Carter and Segal, 1989; Beiser and Jang, 1992; Carvajal and Hardigan, 1999) have identified salary, location, personal fulfilment and the opportunity to use one's abilities and education to help patients as important factors affecting career choices of pharmacy students. Additionally, Carter and Segal (1989) interviewed newly qualified pharmacists about the influences on their choice of first practice setting and reported significantly different responses from the hospital and community practitioners. Hospital pharmacists placed more emphasis on professional development, interaction with other health professionals and the opportunity to use knowledge and develop creative and innovative practice whereas the community pharmacists reported financial rewards and geographical location as important influences. This kind of difference has also been observed in comparisons between career aspirations of medical and dental students. In their comparative investigation, Crossley and Mubarik (2002) reported that medical students were motivated by factors relating to career opportunities, patient care and working with people, use of personal skills and interest in science. In contrast, dental students were more motivated by personal and financial gain and factors relating to the status and security of their occupation.

Other studies have highlighted the positive influence of good role models on career choices. In their study of pharmacy undergraduates in America, Knapp and Carr-Lopez (1995) reported that students exposed to the work of resident hospital pharmacists were more likely to pursue a residency themselves. Blades *et al.* (2000) confirmed this theory in their study of medical students in the UK. Medical students who chose hospital practice as their career path frequently cited positive role models in the hospital sector as having an influence. It also appears that good role models and previous work experience may also initially influence some students to pursue a degree. This has been suggested by studies involving pharmacy, medical and dental students conducted both in America (Chisholm and Pritchard, 1995) and in the UK (Rees, 1985; Crossley and Murbarik, 2002). However, the relevance of these studies to today's pharmacy undergraduates in the UK is unclear.

Whilst it is recognised that many of these factors are independent of the undergraduate degree course, students' perceptions may be developed into more

informed opinions by undergraduate experience and exposure to practicing pharmacists. It is currently unclear which factors have the largest influence on career choice and to what extent students make informed decisions about their future careers. It is hoped that by better understanding the factors which influence pharmacy students' career choices, it may be possible to target career advice more effectively towards undergraduates in the future.

AIMS AND OBJECTIVES

This paper aims to explore the influences on career choices amongst pharmacy undergraduates in one School of Pharmacy and to examine students' perceptions of careers in hospital and community pharmacy.

To achieve this aim, the following objectives were set:

- To determine how many students had previous community or hospital experience,
- To determine how many students had made career decisions at the beginning and end of their third year of the pharmacy undergraduate degree course and what their career decisions were,
- To determine students' perceptions associated with careers in hospital and community pharmacy,
- To determine the influence of the Clinical Pharmacy Practice (CPP) course on the students' career decisions,
- To identify other factors that may have influenced career choices.

METHOD

Two questionnaires were designed by the CPP course tutors and the module leader at the University of Manchester; these were to be completed by the first two cohorts of students undertaking the CPP course. Questionnaire 1 was to be completed by students entering their third year of the four-year M.Pharm. degree course and questionnaire 2 by the same students at the end of the third year of the course. The aim of questionnaire 1 was to investigate the extent of students' work experience within pharmacy and to discover their opinions regarding career prospects, salaries and opportunities in the hospital and community sectors. The students were given the option to make further comments about career opportunities in these two branches of the profession and whether they had already made a career decision at that stage. A combination of open and closed questions and attitudinal statements were employed.

Questionnaire 2 aimed to determine whether students' beliefs and attitudes towards hospital and community pharmacy had changed during the year. Third year students were chosen as they have to make decisions about their future careers during this year in order to apply for pre-registration positions. Again, a combination of open and closed questions and attitudinal statements were employed. Questions were asked to determine if there had been changes in students' career aspirations since the beginning of the year and what factors had influenced these changes.

The questionnaires were piloted on colleagues and 10 third year pharmacy undergraduates to test the suitability of the questions and for readability. Suggestions made by these individuals were incorporated into the final questionnaires.

Both questionnaires were distributed by an academic member of staff and completed at the end of a lecture. Students were asked to put their names on the questionnaires in order that questionnaires 1 and 2 may be matched.

Questionnaire responses were entered onto Microsoft Excel and analysed using descriptive statistics.

RESULTS

Questionnaires were collected for two consecutive year groups (1999/2000 and 2000/2001) undertaking the third year of the four-year M.Pharm. degree course. In total 184 (83%) students completed questionnaire 1 and 167 (76%) completed questionnaire 2. All questionnaires received were sufficiently complete to be included in the analysis.

Previous Work Experience

One hundred sixty six students (75%) had experience in community pharmacy by the start of the third year of the course; this ranged from two students with just one week's experience to some students with several years' experience through weekend and holiday work. However, the median time spent working in community pharmacy was sixteen weeks. Sixty-six students (29%) had previous experience in hospital pharmacy; this ranged from one week for several students to one student who had regular Saturday work in a hospital pharmacy department. The median amount of work experience gained in hospital pharmacy was six weeks. Eleven students (5%) had previous experience of working in the pharmaceutical industry; this ranged from one day to 12 weeks.

Career Choices

Eighty-five (46%) students had made a preliminary career decision at the beginning of their third year

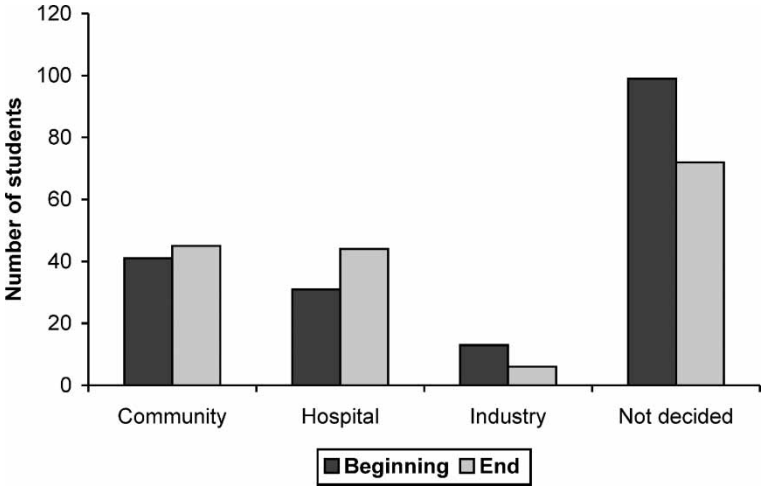

FIGURE 1 Career choices for students at the beginning ($n = 184$) and end ($n = 167$) of their third year.

and 95 (57%) had decided by the end. Notably, 26 (81%) of the 32 students who had decided to pursue a career in hospital pharmacy at the start of the year had previous work experience in this sector. Figure 1 compares career choices at the beginning and end of the year. Whilst the number of students who were undecided about their future careers decreased during the year, there were still 71 (43%) students who had not yet reached a final decision by the end of their third year. These students would be required to complete applications for pre-registration positions in the twelve weeks following their completion of questionnaire 2.

There were differences in career choices when the questionnaires were analysed according to the students' gender. From the names that had been written on the questionnaires, gender was determined for 136 (81%) "part 2" questionnaires. Of these students, 64 (47%) were male and 72 (53%) were female. Figure 2 shows career choices at the end of the third year according to the gender of the students. More female than male students had made a career decision at this stage, with both more males and females choosing hospital pharmacy than community.

Matched Comparisons

It was possible to match questionnaires for 122 (55%) students. Of these, 60 (49%) had either made a career choice after being undecided or were now unsure about their original career choice. Table I shows the changes in career choices that were made during the year. Interestingly, no student changed their career choice from hospital to community pharmacy although some ($n = 7$) had become less sure about hospital pharmacy as their career choice.

Influences on Career Decisions

The students were asked to describe to what extent specific factors had influenced their career decisions (Figure 3). It appears that previous work experience and the CPP course had the largest

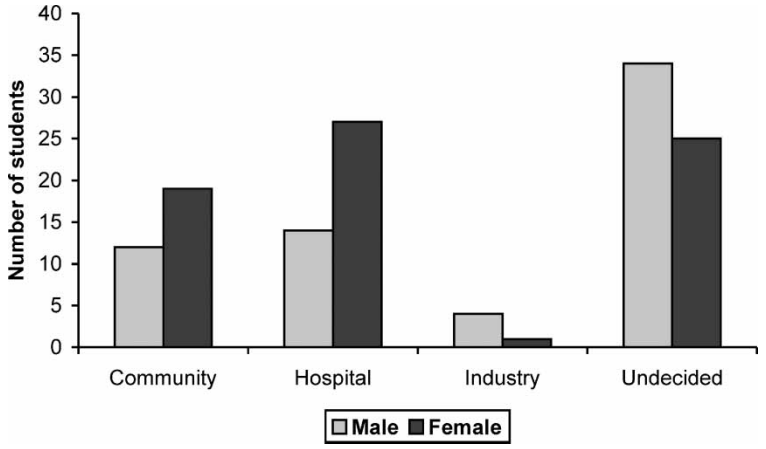

FIGURE 2 Career choice and gender of students ($n = 136$).

TABLE I Changes in career decisions

Changes in career decision	Number of students
Undecided → Community	17
Undecided → Hospital	19
Undecided → Industry	1
Community → Hospital	2
Community → Undecided	10
Hospital → Undecided	7
Industry → Undecided	4

influence. These influences could either be to help them make a decision or to confirm one made earlier in the course or even prior to starting at University. Family connections in pharmacy, community teacher practitioners and road shows were less influential. Other influencing factors reported by students included salary, workload, friends, career prospects, working hours, flexibility and job satisfaction.

Figure 4 shows the influence of the CPP course on students' career choices. More students in the group who specified choosing hospital pharmacy as a career option stated that the CPP course had "definitely" influenced or confirmed their career decision. The majority of both the community and undecided group said that the course had had a "slight" influence on their choice of career.

Attitudes towards Hospital and Community Pharmacy

Students were asked to respond to nine attitudinal statements regarding their perceptions associated with community and hospital pharmacy. The key responses to these statements are listed below.

- Starting salaries were identified as poor in the hospital sector. This was particularly recognised by students who had hospital experience.
- Salaries after five years in the hospital sector were recognised as being better than the starting salaries in hospital, but were still perceived as poor compared to those in the community.
- Opportunities for career progression, further education and professional development were perceived to be better in hospital pharmacy than community pharmacy.
- Opportunities to interact with patients were perceived to be better in hospital pharmacy.

DISCUSSION

The results of this study identify similar influencing factors to those cited in studies in America (Carter and Segal, 1989; Beiser and Jang, 1992; Carvajal and Hardigan, 1999). These include salary, workload, working hours, career prospects, flexibility and job satisfaction. The influence of undergraduate courses on students' career choices is less clear as previous studies have not investigated this.

Undergraduate Pharmacy Practice Experience

Producing enthusiastic, well-informed pharmacists is vital for the future of the profession and undergraduate courses can have a large role in achieving this. The results of this study suggest that students at the University of Manchester value the information and opportunities made available to them as undergraduates as they cite work experience and the CPP course as the most important influences on career decisions. Similar findings have been reported in undergraduate nursing courses. Marsland and Hickey (2003) report that course experiences encouraged nursing students towards wanting to work in a particular speciality.

Through the CPP course, pharmacy undergraduates at the University of Manchester regularly

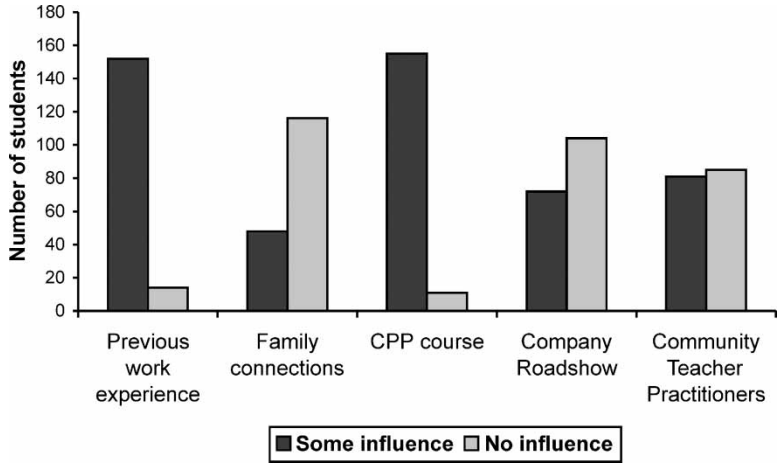

FIGURE 3 Factors influencing career decisions ($n = 167$).

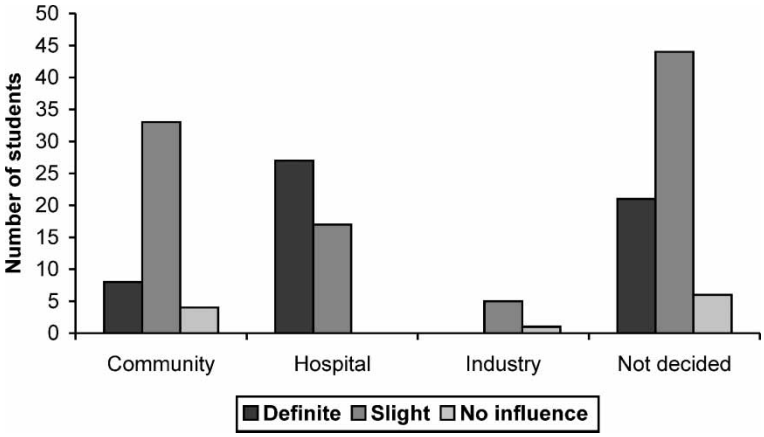

FIGURE 4 Influence of CPP course on career decisions ($n = 167$).

practice the skills that will be required of them as pharmacists. They also study the roles of hospital and Primary Care Trust pharmacists and observe the roles and interactions of different healthcare professionals. By understanding their potential future roles and observing good role models students are thus able to make more informed career choices.

The cross-sector experience for pre-registration graduates emphasises the importance of understanding the various roles of pharmacists and providing pharmaceutical care across primary and secondary care. The CPP course helps prepare students for their cross-sector placement; this should result in newly qualified pharmacists able to practice in a variety of settings with a sound understanding of healthcare provision within the National Health Service.

Implications of these Findings

The results of this study suggest that a proportion of undergraduates had not made career decisions shortly before applying for pre-registration positions, however it is unknown how many of these students had not made this decision at the time of accepting positions. In an unpublished survey of final year students at the University of Manchester in 2003, of the 72 students who responded, 6 (8%) students had accepted a pre-registration place in a sector that was not their preferred option and 19 (26%) were still undecided about their future careers despite having secured a pre-registration position. These results may concern pre-registration tutors and employers. Whilst the pre-registration crossover placement will undoubtedly be of use to undecided students, it may not be sufficient to enable them to make a fully informed career choice. Many pre-registration tutors provide their students with advice and support to enable the student to choose suitable career paths, but this is not a fully recognised role. It is possible that tutors may need more support in enabling their students to gather information about careers. The results of this study suggest that this may particularly be true for males as a larger proportion of male students had not made career decisions at the end of the third year. Employers may be concerned that retaining newly qualified pharmacists in the branch in which they undertook pre-registration training may be problematic. Whilst recruitment strategies targeted towards individuals who are more likely to remain in one sector may influence both recruitment and retention to some degree, this study does not appear to reflect results found in America where influencing factors were very different between hospital and community pharmacists (Beiser and Jang, 1992). However, as this study was not designed to detect this kind of difference, more studies would be needed to confirm or disprove this. Providing training for pre-registration graduates and newly qualified pharmacists demands much in terms of resources. It is likely that the wastage of these resources could be decreased if students made informed career decisions and entered the profession with a good understanding of the options available to them.

Although the students were not asked about the kind of experience and advice they would like to enable them to make informed career decisions, it is probable that universities can help. The fact that the CPP course at the University of Manchester was cited by the majority of students as having influenced their choice of career highlights this.

Limitations

The usefulness of this study's results are limited by several factors. Whilst students were asked specifically about their career decisions, it is unknown whether they perceived this to mean their pre-registration placement or longer-term career decisions. It is therefore not possible to determine whether these results are a true reflection of

students' career choices rather than decisions regarding pre-registration training only. Unfortunately, there is little information to suggest how closely these two are related. In their study of nursing students, Marsland and Hickey (2003) report a stronger association between course influences and plans for three years after qualification, than between course experiences and first jobs, however the relevance of this information to pharmacy students is unknown.

The results of this study apply to pharmacy students at the University of Manchester and may not necessarily correlate with other undergraduate courses, especially if there is no equivalent CPP course. Questionnaires were only given to students undertaking the four-year degree, so no comparable information is available for the three-year degree which did not contain the CPP course. Also, students were not followed-up to collect any data regarding the sectors of practice during and after completion of their pre-registration year. It is therefore not known how many students took placements in their preferred sector or remained in the sector in which their pre-registration training was undertaken. Notably however, longitudinal studies of medical students and doctors suggest that initial career aspirations are not a good indicator of eventual career destinations. In their study of medical graduates, Edwards *et al.* (1997) report that only 65% were working in their first year career choice (expressed at the end of the pre-registration year) 11 years after graduating. Again, the relevance of this information to pharmacy graduates is unknown.

CONCLUSION

It is unclear from this study how students' choices of pre-registration placements are related to their eventual career choices. Whilst many students will obtain pre-registration positions in the sector in which they wish to practice upon qualification, there may be other reasons why students apply for and accept places. This clearly needs further investigation and may enable employers to minimise problems with retention of staff in the future.

Almost half of the students in this study had not made a career decision at the end of their third year of the course and many other students' decisions had changed over the course of the year. Whilst changes in career decisions are only natural whilst students are considering options available to them, it is unknown if students change their career decisions further during the fourth year of the undergraduate course, pre-registration year and in the first year after qualification. Further research including follow-up studies with pre-registration graduates and newly qualified pharmacists is planned which may also help address how career information is currently perceived. Information about job expectations and satisfaction will be sought and reasons for changing jobs explored.

Acknowledgements

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