



**Pharmacy Undergraduate
Students: Career Choices &
Expectations Across A
Four-Year Degree Programme**

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1. SUMMARY

1.1 Context of the Study

1. This study was funded by the Pharmacy Practice Research Trust and carried out in 2004/2005. The aim was to establish a baseline understanding of the career aspirations, motivations and expectations of students within undergraduate pharmacy education in the UK.
2. The study consisted of a review of statistics on pharmacy entry in the UK from the Universities and Colleges Admissions Service (UCAS) and a survey of all students on the first and final years of UK pharmacy degree programmes by self-completion questionnaire.
3. 1,163 completed questionnaires were received from a sample of 3,306 first and final year students in 13 schools of pharmacy: a return rate of 35.2%.

1.2 UCAS Data Analysis

1. Over the period 1998 to 2003, increases in intake to schools of pharmacy were made from a static applicant pool. There is evidence of saturation of the core applicant pool with intakes over this time becoming critically dependent upon clearing: the UCAS application process for pharmacy was moving from selection to recruitment. This has implications for the quality of the intake, for future attrition and for academic standards within the pharmacy sector.
2. The majority of applicants for pharmacy were female, the percentage of female applicants has risen consistently since 1998. A similar trend applies to medicine.
3. The majority of applications for pharmacy were from the 18-19 year group with less than 10% over the age of 25.
4. Total applications from Asian students (average 47% of pool) exceeded those from white students (average 40% of the pool). Applications from white males have declined consistently to around 12% of the total pool and applications from white females have been in decline since 2000.
5. The undergraduate profile showed that pharmacy recruits from a diverse population, however, the number of black students was very small. Approximately 40% were drawn from the semi-skilled and manual classes, compared to medicine at 23%.

1.3 Survey

1.3.1 Motivations and Influences

1. This study tested all the previously used motivation statements to produce a benchmark showing the relative importance students attach to each one. Employment opportunities were perceived to be the most important extrinsic influencer. A number of intrinsic influencers were also important and these fell into two groups – like of and aptitude for science and personal aspirations for a good career.
2. The three most important educational influences upon the decision to study pharmacy were university prospectuses, university open days and careers leaflets or

booklets. The three most important personal influences upon the decision to study pharmacy were pharmacy work experience, parents and family. Career linked influences were seen as more important than either educational or personal influences. The professional body for pharmacy, the Royal Pharmaceutical Society of Great Britain (RPSGB) was not seen as influential.

3. The reasons considered most important to study pharmacy were objective ones that related to self-interest, both in terms of the nature of the degree course and the advantages conferred by the degree. However, for female students, choice was bounded by employment characteristics.

1.3.2 Choice of School of Pharmacy

1. 72% of all students stated that pharmacy was their first and only choice of subject when they applied for university. There were no differences with gender or year of study. The proportion of Asian students for which pharmacy was the first choice was significantly less than for white students.
2. Students who had studied pharmacy as a second choice had originally wanted to study medicine. More Asian than white students named medicine and dentistry as subjects of first choice. More white students named science and wanting to work in health.
3. 71% of all students entered their school of pharmacy through the standard UCAS procedure after holding a firm conditional offer of a place (CF). A further 16% entered through the UCAS clearing scheme. Fewer Asian students entered through the normal system and more entered through clearing.
4. For all students, the most important influences upon selection of school of pharmacy were the extrinsic factors of reputation of the school, reputation of the university and the nature of the course described in the prospectus. While there were differences in importance linked to gender and to ethnicity, these did not influence those factors considered most important.
5. Female students were more influenced by the nature of the course as described in the prospectus, by the reputation of the university and by the location of the university in relation to their home. Male students were more influenced by friends at the school and family at the university.
6. Asian students were more influenced by the reputation of the school and the university facilities but less by open days. They were also more influenced by personal recommendation, by friends at the school, by parents and by family in the university.
7. 57% of students stated that their desire to study pharmacy was very strong at the time of entering their course. A smaller proportion of Asian students than white had a strong desire to study pharmacy.

1.3.3 Career Image

1. The majority of students were proud to be studying pharmacy and committed to the values and ideals of the profession. There were no differences between females and males or Asians and white students.

2. About 5% of students regretted entering pharmacy.
3. Students were generally positive about pharmacy as a future career and satisfied with their decision to choose it as a subject to study and as a career. Females were significantly more positive than males and Asian students were less positive than white students. The reasons for the gender and ethnicity difference require further research.
4. Final year students were asked to consider how their family and friends thought about pharmacy. Over 90% perceived that their family and friends would consider pharmacy to be a well paid job and to offer guaranteed employment, yet 37% stated that it offered few opportunities for promotion and career development. There was no significant difference between responses of male and female students. Responses of Asian students were significantly different from those of white students in relation to the lack of opportunities for promotion and career development and pharmacy as a secondary profession to medicine.

1.3.4 Future Career Ambitions

1. Choosing their career destination was bounded by a lack of knowledge, shown especially by the high interest in pharmacy ownership possibilities. The study showed later that socialisation into pharmacy over four years with course material, contact with teachers and work experience or practice placements helped students to make a more realistic decision.
2. **Preregistration Destination.** Multiple community pharmacy was the first choice sector for both first (25%) and final year (41%) students. Only 5% of final year students compared with 20% of first year students were not sure of their preregistration destination. More females were interested in hospital posts and more males than females in community posts. More Asian students than white students were interested in community careers and less in hospital.
3. **First Post after Preregistration.** Multiple community pharmacy, NHS hospital pharmacy, community independent pharmacy and locum pharmacy were the most popular career areas for both first and final year students for the first post after preregistration training. Significantly more females than males would consider posts in an NHS hospital and in an NHS Primary Care Trust. Significantly more Asians than white students would consider a post in multiple community pharmacy and significantly more white students would consider a post in hospital pharmacy.
4. Between a third (first year) and a half of students (final year) would consider locum employment.
5. **Five Years after Qualification.** 40% or more of first and final year students expected to be working in the same sector as their preregistration experience five years after qualifying as a pharmacist. Over 20% expected to be working as self-employed, abroad, as a locum or as an employee. A small proportion of students (less than 5%) expected to be working outside pharmacy.
6. Significantly more females than males expected to be taking time out with their family or to be working on a temporary basis while significantly less expected to be self-employed. Significantly more Asian students than white students expected to be self-employed or to be working as a locum and significantly less expected to be working in the same sector as their preregistration placement or to be an employee.

7. Between a quarter and a third expected to be working as a locum.

1.3.5 Work Life Balances

1. It is in exploring work life balance that the differences between male and female students were at their most noticeable. The most obvious difference was in the proportion of students intending to take a career break for family reasons (three to four times as many females as males) and intention to work full time until retirement age (twice as many males as females).
2. The option of working full time until retirement was no longer the accepted pattern for future work - it was anticipated by only about half of the males and a quarter of the females.
3. One third of all respondents intended to work as a locum. More males than females wanted to be self employed.
4. Students were asked to select their three top ambitions. The four most popular responses were the same for first and final year students: owner of a community pharmacy, manager of a community pharmacy, chief pharmacist and hospital pharmacy manager. The option 'employee in community pharmacy' was selected by only 12% of final year students and 8% of first year students. More female students selected hospital pharmacist, hospital pharmacy manager and practice/PCT pharmacist and more males selected owner of a community pharmacy. More Asian students than white students selected community pharmacy roles, significantly less selected work in a PCT pharmacy, hospital pharmacy manager or hospital pharmacy and academic pharmacy.
5. Ownership of a community pharmacy was the most commonly selected "top career ambition". This represents a serious mismatch in personal ambition and reality that could create future workforce dissatisfaction. There is a need for further study to understand why this is perceived as attractive in the pharmacy context.
6. Asian ambitions are more focused on self employment than for white students although both white and Asian males were more focussed on this outcome than were females.
7. Although the pattern of full time work to retirement is no longer a majority aim, most students did expect to work in full time mode when qualified. Male students anticipated a longer working week than female students.

1.3.6 Influences of the School of Pharmacy (final year students only)

1. Before they entered pharmacy school, around two thirds of students had a definite idea as to the area of the pharmacy profession that they wanted to work in. For the majority it was community pharmacy.
2. Around one third of the students who started with a definite idea of their career area changed their mind during the course. The largest change was in those who had originally wanted to work in industry.
3. In relation to the pharmacy degree course, the two factors that most influenced career choice were course content and hospital visit/hospital teaching. This demonstrates the capacity for work-placed learning to influence career choice.

4. The least influential features of the degree course upon career choice were the final year project and fellow students' career choices.
5. When asked about the influence of experience of pharmacy upon career choice, weekend or vacation experience in community pharmacy was the most influential factor followed by contact with pharmacists and weekend or vacation experience in hospital pharmacy. The difference between experience in community and hospital may reflect access since hospital experience is more difficult to achieve.
6. For the majority of students, student debt did not influence career choice.
7. Other factors external to the pharmacy course had little influence. These included preregistration recruitment fairs and company recruitment material, the Pharmaceutical Journal or attendance at pharmacy related meetings such as the British Pharmaceutical Students Association (BPSA) or local branch. The preregistration presentation by the RPSGB was also considered to be of little influence.
8. Just less than one quarter of respondents had considered changing their course or leaving their studies at least once and the most common reason was mistaken choice of course. Less than 2% attributed this to student debt. This finding suggests a need for further national research in attrition and drop out patterns.
9. These findings show that experience during the academic course has a major influence upon final career choice destination. Work experience, placements and personal interactions with other pharmacists including pharmacy practice teachers were of most significance.
10. The nature of the course can therefore have major impact upon the ambitions and expectations of students. This study provides evidence that the most significant factor is contact with practice during the undergraduate years. This finding has major implications for pharmacy since, at present, arrangements for practice placements in the undergraduate degree are *ad hoc* with no national funding¹.

1.4 Conclusions

1. This study has consolidated all the previous knowledge on motivation for pharmacy as a career and choice of school of pharmacy. Both decisions emerge as highly rational based upon a mix of extrinsic factors, most notably employment and financial reward, and intrinsic factors such as academic preferences and personal career goals.
2. The study has shown significant differences in attitudes between male and female students, but the most unexpected and striking difference was the difference between white and Asian students. Whilst many of the gender differences are already known, such as a preference for hospital pharmacy and the opportunity for part time employment, the same cannot be said of ethnicity. With one or two notable exceptions, there has been very little research undertaken on the ethnicity differences of pharmacists.
3. The study has raised a number of questions about the career image of pharmacy and about career opportunities in pharmacy. The most positive perceptions linked to job opportunity and financial reward with realistic assessments of work conditions such as long working hours and questions about the potential for career advancement.

4. There was evidence of a mismatch between students' ambitions and reality - particularly in the area of business ownership and independent working. There was also a strong indication that students no longer subscribed to the typical career path of lifelong working for an employer until retirement. These findings are of significance given the current movement of pharmacy towards an employee profession. Further research is indicated to develop our understanding in this area and in particular to explore what it is about business ownership that is attractive.
5. The schools of pharmacy emerge as major influencers of students' choice and ambition both in the application process prior to joining a pharmacy degree and in terms of career ambitions during the degree. Contact with pharmacy and degree placement studies were of major impact and this provides further evidence of the importance of developing a national strategy for work placed learning in the pharmacy degree.
6. The professional body, its publications and related activities emerged as a very weak influence upon students both in their decision to study pharmacy and in their career choices during study. The RPSGB does not really make direct contact, and therefore relevance, until the trainee at preregistration level applies to be registered. This is a missed relationship opportunity to bring all students studying pharmacy into the 'pharmacy family' and has important implications for the ability of the RPSGB to influence the workforce supply.

2. INTRODUCTION

2.1 The Study

This is a time of change in healthcare economies. In the NHS, structural changes provide new career opportunities for hospital pharmacists. In primary care, modernisation and the realisation of some of pharmacy's professional ambitions – such as repeat dispensing and medicines use review – have been acknowledged through the new pharmacy contract.² In the community pharmacy market, major changes in pharmacy ownership, away from independent pharmacy towards multiple corporate owners, is changing the possibilities for owning a small business in pharmacy. This trend has implications for students in this study who expressed an intention to be a pharmacy owner.

The Pharmacy Practice Research Division commissioned a programme of workforce research as part of its strategy 2001-6. A Workforce Research Forum and a Workforce Advisory Group informed the debate. Consequently the first pharmacy register census was undertaken in 2002³ and repeated in 2003⁴. Two projects were commissioned in 2003. There is a longitudinal cohort study, which intends to track preregistration students for five years following their career progress. The second study, described here, is a study of undergraduates within the schools of pharmacy.

The aim of the *Pharmacy Undergraduate Students: Career Choices and Expectations Across a Four Year Degree Programme* was to provide a substantial contribution to understanding the career aspirations, motivations and expectations of students within undergraduate pharmacy education in the UK at the beginning of the twenty-first century and to provide a foundation for further research on student aspirations and perceptions of pharmacy as a profession.

There have been relatively few studies of the factors that influence UK students to enter pharmacy or of applicants' perceptions of the profession. All the published data relates to views obtained after the point of decision to apply rather than of the views of the general student body at the time of application. Later in this section, we present a brief summary review of the literature. This study has incorporated all the elements of earlier research to provide a picture of why students choose pharmacy, what attracts them and where they see their career going. As part of the overall study, we have also conducted a series of focus groups with year 12 students in schools and colleges to determine their perceptions of pharmacy as a career. The findings from this sub-study have been presented to the RPSGB in a separate report⁵.

The project was designed to provide a quantitative picture of the general factors that influence student choice and the current importance of those factors that appeared important in the past. The key areas that appeared important were:

- motivating factors to study pharmacy;
- perceptions of the profession and their origin;
- views of career development within the profession; and
- attitudes to key aspects of the profession such as healthcare work, business and management and developing clinical roles.

2.2 Design of the Study and Summary of the Literature

In this section we set out the conceptual definitions and theoretical underpinning of the study, linking in to the literature. We begin by considering what the concept 'choice' actually

means, followed by a consideration of major theoretical approaches to understanding, leading up to the conceptual map.

2.2.1 Career Choice

There are a range of uses of the concept 'choice'⁶:

- An act – of choosing or selecting.
- The opportunity or power of choosing.
- An alternative action or possibility.
- A supply from which to select.

Of the many psychological theories used in career studies, we focused on two well known - rational choice theory and human capital theory. However, we propose that rational choice is bounded by social circumstances, conditions and events. We have also considered two other theories, preference theory and work-lifestyle balance (theory) which may inform our understanding of people actually in the labour market, but which may form dimensions of the bounded nature of rational choice. This leads to an exploration of the notions of career and motivation and finally there is some consideration of what this means for the research design.

2.2.2 Rational Choice Theory

The term *rational* is widely used in relation to career choice. Rational can be defined as⁶:

Using reason or logic in thinking out a problem or endowed with the capacity to reason – hence 'man is a rational being'.

In relation to careers, the theory of rational choice states that when faced with several courses of action, people usually do what they believe will have the best overall outcome for themselves⁷. Rational choice theory is the theory most commonly used in studying career choices and motivation, particularly in those choices made at age 16⁸. These definitions of choice suggest a purposive act, an act based in traditional economic thought as a rational act. The rational choice theory makes assumptions about the decision maker, that they are rational, motivated by self interest and calculating. The decision is oriented towards choosing the option with the highest *utility*; that the choice is made on *perfect information*; that the chooser understands the likely consequences of the decision.

2.2.3 Human Capital Theory

One dimension of rational choice is Becker's human capital theory, based on economic principles and applied amongst other social phenomena to education⁷. When asking 'why do people pursue further education?' he concluded that variations in education patterns between social groups vary with the rewards that can be obtained. Human capital theory assumes a process of rational choice, based upon rational man theory, to acquire resources. "Human capital refers to the resources, qualities (including personality traits) skills and knowledge that are either available to or acquired by an individual to maximise their own employability"⁷. However, rational choice theory and human capital theory when applied to career making decisions by an undergraduate at a school of pharmacy may fail to recognise the complex, interactional, intellectual and situational processes that are also involved.

2.2.4 Bounded Rationality

In real life undergraduate career choices are bounded by many other actors and influences – hence the notion of bounded rationality⁹. Bounded rationality allows us to take into account the complexities of the undergraduate world, recognising context, culture and the labour market as key influences. Simon⁹ acknowledges three similarities to rational choice theory:

- both theories distinguish the individual as the basic actor in society;
- both view self interest as the main motivating force behind choices; and
- both involve a conscious choice.

And six departures from rational choice theory:

- the actor has limited computational abilities;
- they have uncertain and limited information (imperfect knowledge);
- they search for alternative consequences and other information selectively;
- it stresses the cognitive component of the actor in producing behaviour goals and conceptions oriented to the world;
- process not outcome is emphasised; and
- it uses the concept of *satisfying* as opposed to *optimisation*.

Bounded rationality recognises the uncertainty of the environments in which the individual operates, meaning that the individual depends on habits, routines, and institutions to provide regularity to their environment. When thinking of school leavers most occupational decisions are made in a 'dependent' style. The influence of friends and family take precedence so the school leaver can effectively allow others to make the choice.

2.2.5 Preference Theory

Hakim's preference theory offers an explanation for the position of women in the labour market¹⁰. She argues that the main determinant of women's heterogeneous employment patterns and work histories is their 'preferences' for family work and paid employment. She argues that careers are not centrally important for the greater majority of women. There are substantial theoretical and empirical criticisms of Hakim's theory which we do not intend to pursue here. Nevertheless it could be useful in explaining why the majority of primary care pharmacists are women, where a mixture of balancing employment and family responsibility is possible. So, although rational choice theory is based on rational man, it is possible that the rational choices that women make are 'bounded' by their social and family preferences and the constraints which they bring.

2.2.6 Motivation

We use the concept motivation as 'the reason for a certain course of action, whether conscious or unconscious'. Other¹¹ useful alternatives to the concept of motivation are: ambition, desire, drive, interest.

A small number of studies have measured the motivational drivers which influence the choice of pharmacy as a profession at different stages in the preregistration phases. Booth *et al*¹² sought to determine the motivation of applicants for places in a school of pharmacy, looking at factors influencing choice such as: sources of influence, school characteristics, and other career alternatives. Similarly Rees with first year undergraduate students in a different school of pharmacy.¹³ Other authors have measured the comparative influence of extrinsic and intrinsic motivators behind choice of university course in medicine¹⁴ and in Australia, of pharmacy¹⁵. Extrinsic factors are those associated with work conditions and

rewards such as: income and status, the potential for self employment or part time work. The intrinsic factors are: liking science, liking people, intellectual satisfaction, being socially useful. Roller's research in Australia shows that the intrinsic factors tended to score consistently and significantly higher than the extrinsic factors over five years. The only UK study to cover undergraduate choices at the preregistration stage used a mixture of extrinsic and intrinsic factors¹⁶.

2.2.7 'High Flyers and Life Style' Work-Life Balance Theory

The definition of a career is 'a profession or occupation chosen as one's life's work'. So we need to explore to what extent undergraduates consider they are taking on a 'career'. Most published pharmacy studies use the concept of 'pharmacy as a career'¹² and 'post entry career paths'¹⁷ without definition. However 'career commitment' is defined as "one's attitude towards one's profession or vocation" by Cline *et al* (1999)¹⁸. In these two examples, the concept of career is used as a metaphor: career path as a metaphor for journey and "career commitment" as a metaphor for career as a role¹⁹. Inkson describes "careers as abstractions as constructs open to construction and interpretation from many different sources". Career metaphors have been described as "an epistemological ragbag"¹⁹. This suggests that we need further investigation as to the nature of pharmacy careers.

So, the pharmacy career is associated with a profession and maybe even a vocation in life. Rascati²⁰ refines career commitment further by distinguishing between commitment to the entire field or role, from a commitment to the job or one's organisation. Pharmacy is not usually associated with being 'just a job' or just employment, although employers use the words 'manpower' and workforce when describing their employees.

Popular notions of a career include the idea of a lifetime association with a chosen profession; the potential for graded career progression upwards into management and of safe well rewarded secure employment. The notion of what constitutes a career may be changing. There is new research evidence by the charity Common Purpose, which claims that talented young people want more out of life than their predecessors²¹. They want more than their career offers. The centrality of a career in life and as a 'label' may be declining²². They are looking for personal satisfaction and by the mid 30s they find themselves caught up in a financial trap of student, mortgage and credit card debt. Moreover, they are disappointed with the reality of work and their career does not help them to realise their wider life ambitions. The drive towards seeking a better work life balance is relatively new. Employers are not seen as sensitive or sympathetic to this 'mood'.

2.2.8 Summary

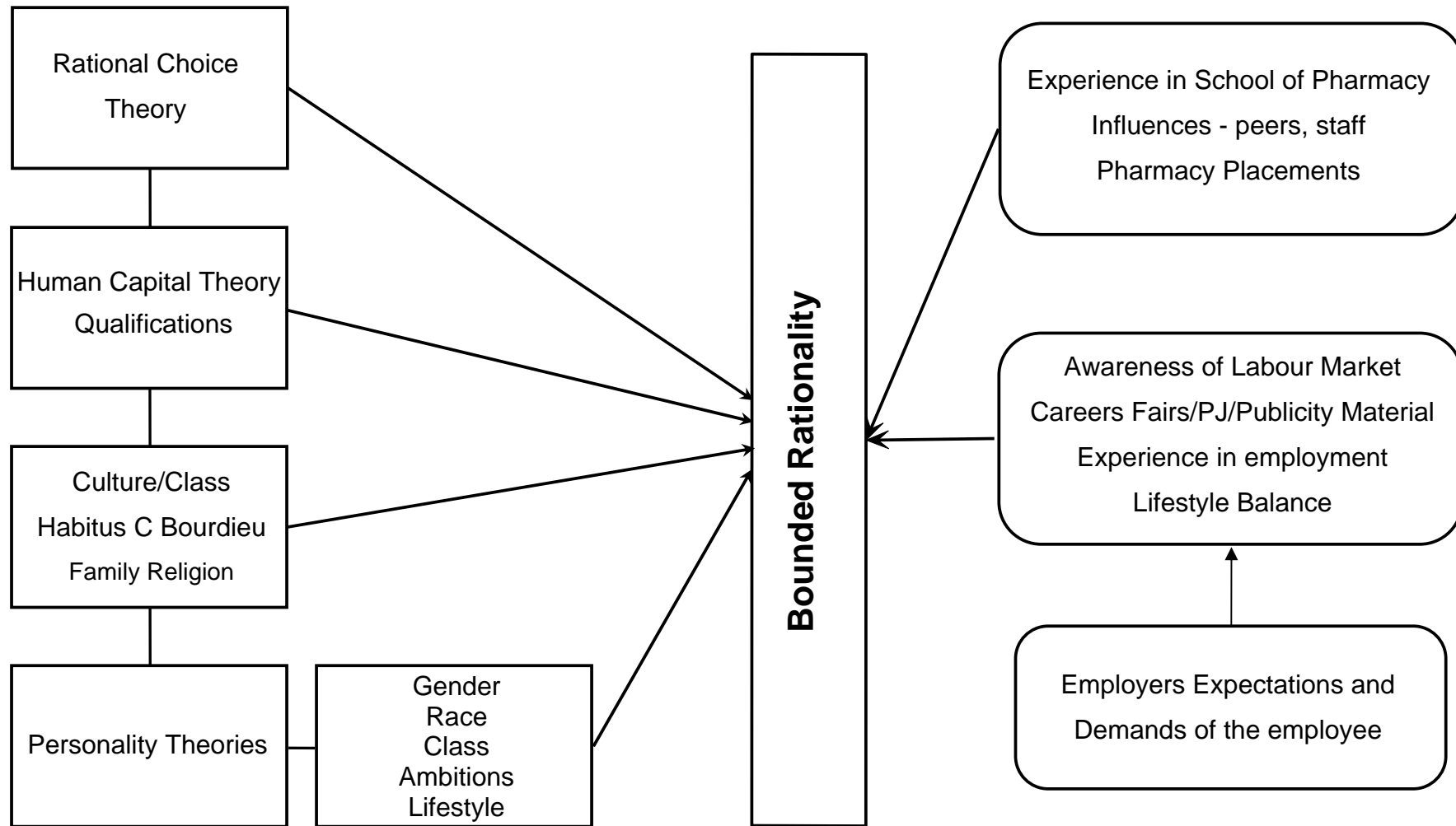
This brief review of the theoretical and pharmacy literature raises many questions. This 'work life balance theory' might explain why more and more newly qualified pharmacists want to travel around the world and why they are only prepared to take locum work – because they want the rewards and not the career. There are limitations. We do not yet know to what extent pharmacy undergraduate choices or rationale for choice resemble or differ from other graduates. On the one hand the skills and qualifications they gain as pharmacy graduates have made them employable in many overseas countries, making travelling a feasible option. On the other hand they will be well informed about disappointment with the reality of pharmacy after the preregistration year by the time they are qualified. Hence they are making rational career decisions 'bounded' by social influences and the demands of the labour market.

2.3 A Conceptual Framework for the Study

The conceptual framework is presented in a diagrammatic model. Taking on a framework of bounded rationally, implicitly acknowledging variations in human capital, the key concepts of *the opportunity or power to choose, from amongst alternative options* in a pharmacy career is bounded by:

1. A society where careers and occupations are characterised by gender, social class and race (ethnicity). These factors will have an influence on individual career ambition and lifestyle desires.
2. Experience within the school of pharmacy, influences of peers, staff, knowledge derived from external visits, work placements and those staff, the ethos and history of the school of pharmacy.
3. An individual and collective awareness of the labour market opportunities available at any given point in time (for example, reading the Pharmaceutical Journal on workforce shortages; peer talk about which employers interview, recruit, train and retain staff; the labour market itself and employer's expectations and demands of pharmacists).

A Conceptual Map of Career Choice - Undergraduates in a School of Pharmacy



3. METHODS

3.1 Analysis of UCAS Student Data

Data were obtained through the UCAS statistical service. The data obtained covered the applications to pharmacy and to medicine from 1998-2003 (the only data available at the time of the start of the research). It must be noted that the data is that of applicants to these courses, not those who were accepted onto degree courses, although the data is suitable for comparative purposes in this case. Where comparative figures are shown for responses to 1st year questionnaires, they relate to 2003 UCAS application data (the latest data available). Where comparative figures are shown for responses to 4th year questionnaires, they relate to 2001 UCAS application data, as this is the year of entry for the majority of fourth year students. UCAS data is also only that of home and EU students, so some slight differences may occur due to the questionnaire data containing some overseas respondents (18.1% of first year respondents, 5.9% of 4th year respondents).

UCAS age data has been combined to match the age categories given in the questionnaire. Because UCAS combines ages from 25-29 years and upwards, comparison with the highest age group in the questionnaire (26+) was not possible. This group has therefore been combined with 24-25 years to give a category of 24+. UCAS age data is also based on the age of the applicant on 1st September of the year of entry to a degree course (i.e. for 2003 entry, the age of applicants on 1.9.2003). The age data obtained from the questionnaire is that of the respondent at the time of completion of the questionnaire.

Ethnicity data from the questionnaire has been combined into the following categories to minimise small groupings:

- White (included: British, Irish and Other White background).
- Black or Black British (included: Black Caribbean, Black African and any other Black background).
- Dual Heritage (included: White and Black Caribbean, White and Black African, White Asian and any other mixed background).
- Asian (included: British Asian, Indian, Pakistani, Bangladeshi and any other Asian background).
- Chinese or Other Ethnic Group (included: Chinese and Any other background).
- Don't want to say.

It should be noted that UCAS include the Chinese ethnic group within the Asian population.

Socio-economic data is more difficult to compare on a year-by-year basis. From 1998 to 2001, UCAS used Social Class, based upon the Standard Occupational Classification 1990 and 2000. In 2002 and 2003, UCAS started using a simplified version of Socio-economic Status (NS-SEC) based upon the Standard Occupational Classification 2000 and the two are not directly comparable.

3.2 The Survey

3.2.1 Survey Design and Core Questions

The survey was designed using the motivation variables from a number of earlier surveys and after scanning two work satisfaction surveys.^{23,24} The questions in the 2004 NHS Workforce Survey²³ were considered but ruled out because the study covered staff already in post and in an exclusively public sector employment. The factors were less useful because of the diversity of pharmacy ownership and employment patterns across public (NHS Trusts) and commercial (multiple and independent ownership) sectors. By comparison a study by Arnold *et al*²⁴ was useful since it aimed to identify features of NHS employment which attracted or deterred staff and it contained some useful statements that were directly relevant to pharmacy.

The design incorporated measures to test the conceptual framework outlined in the introduction to this report. We measured opinions, perceptions and motivation towards pharmacy as a subject of study and as a profession.

The questionnaire designed for first year students contained 14 pages with a total of 28 questions. The questionnaire for final year students contained an additional section covering their experience as a final year student; this version consisted of 20 pages with a total of 40 questions. In both cases, most questions were closed. The questionnaires were divided into the following sections:

Section 1: Motivations and influences.

Section 2: Choice of School of Pharmacy.

Section 3: Career image.

Section 4: Future career ambitions.

Section 5: Work life balance.

Section 6: Your experience as a final year student (final year students only).

Section 6/7: About you.

The survey was piloted with two groups of pharmacy undergraduates: all year one students and all final year students in a UK school of pharmacy. Both groups answered the core set of questions.

3.2.2 Fourth Year Supplement

The questionnaire supplement for fourth year students was based on exploratory focus group work with final year students (unpublished) and the right hand side of the diagrammatic model of the conceptual framework (see section 2.3, page 11).

The supplementary section consisted of twelve questions. The first questions assessed real experience within the school of pharmacy during the MPharm course.

- Within the school of pharmacy.
- Within placement education linked to the school of pharmacy.
- Of employment in pharmacy – vocational.
- Of employer attitudes and views through employment and through involvement in the preregistration process.

The remainder of the questions were about external pharmacy related factors which may influence career decisions and direction. A number of statements tested some commonly

held notions about working as in healthcare and as a pharmacist. Finally, we measured perceptions of the status of pharmacy compared to other key health professions.

3.2.3 Administration of the Questionnaire

A lengthy negotiation process was undertaken with a lead contact in each of the sixteen schools of pharmacy (16 at the time, now 22). Unfortunately there were two other student studies going on at the same time, which meant that both staff and the same students were over-surveyed. The survey questionnaire was sent to a named contact in each school for ethical committee approval (see section 3.2.7) and comment prior to administration of the survey. At this point two schools declined to participate. The protracted manner in which these negotiations took place meant considerable slippage in the administration of the survey, where timing during term time was all important. Final year students complete their studies early in the final year, which further complicated the timing.

Having obtained ethical approval from each institution the survey questionnaire was re-piloted and posted in March/April 2005 to 14 of the 16 established UK schools with a current final year cohort who agreed to participate. In recognition of the work involved, £500 was offered to each school to cover administration costs. In addition, one prize per participating school (£80) was offered to the students as an incentive to participate in the study.

There were considerable obstacles in administering the survey, resulting in a less than desirable outcome. The process of administration varied considerably across the schools to the extent that it produced a markedly variable response rate. We had no control over the administration process, of when the survey was handed out or collected in. We had to be pragmatic and go along with what each schools was prepared to do.

- 9 schools provided us with both first and final year class lists. We sent them named labelled envelopes.
- 2 schools were not prepared to hand over class lists for data protection reasons. We provided sealed numbered envelopes.
- 3 schools distributed unmarked questionnaires during a lecture. Two schools distributed to both years (first and final) and one school only distributed to first year students as their final year students were not in the school at the time of the study.

3.2.4 Response Rate

The variable administration approach is a result of different requirements by the schools. It is not ideal in textbook terms, but was a pragmatic response to a difficult situation. The main implications were the loss of time which meant that students were no longer in school after the first distribution. This was a lost opportunity to follow up non responders and so boost the response rate.

The final response rate by the beginning of June from 3,306 students was 35.2% (n=1,163). This splits into 657 first year students (response rate 35.0% (n=1,878)) and 506 final year students (response rate 35.4% (n=1,428)). The variable administration approach resulted in a range of response rates by school from 14.1% to 83.0%. Owing to its choice of distribution method, the response rate in one school was so low (2.5%) that this school was omitted from the analysis. Table 3.1 shows the variability of response rate between years and schools of pharmacy.

Table 3.1: Survey response rate by school (for the 13 schools included in the study).

School of Pharmacy	First year response rate (%)	Final year response rate (%)	Overall response rate (%)
1	40.7	47.3	44.0
2	34.1	60.4	44.8
4	23.0	54.8	35.5
5	22.1	18.0	20.2
6	18.7	24.8	21.3
8	37.2	N/A	37.2
9	12.6	16.9	14.1
10	30.0	41.9	35.6
11	87.0	4.8	51.3
12	17.3	20.8	19.0
15	23.0	18.5	20.9
16	68.9	31.8	49.6
17	71.6	98.3	83.0
Overall	35.0	35.4	35.2

3.2.5 Profile of Respondents

In the total sample, 1,156 respondents provided data on gender: there were 347 responses from male students (30% of total) and 809 from female students (70% of total). Table 3.2 shows the profile of respondents by gender and year of programme.

Table 3.2: Respondents by Year of Programme and by Gender.

Gender	First Year Respondents	Final Year Respondents
Male	209 (32%)	138 (28%)
Female	447 (68%)	362 (72%)

Table 3.3 compares the gender of respondents to the student survey with that of the UCAS applicant pool for the cohorts (2001 for final year and 2003 for first year). For both years the proportion of females responding was a little greater than that in the application year.

Table 3.3: Gender of Questionnaire Respondents compared with UCAS applicants.

	1st year Questionnaire data (%)	2003 UCAS data (%)	4th year Questionnaire data (%)	2001 UCAS data (%)
Male	31.9	39.1	27.6	37.8
Female	68.1	60.9	72.4	62.2

A total of 1,141 respondents provided data on their origin (EU or overseas). The analysis by origin and by year of programme is shown in Table 3.4.

Table 3.4: Respondents by Year of Programme and by Residential Status

Residential Status	First Year Respondents	Final Year Respondents
EU (including UK)	535 (82%)	459 (94%)
Overseas (outside the EU)	118 (18%)	29 (6%)

The profile of students by ethnic background is shown in Table 3.5. This is a simplification of the coding scheme used on the questionnaire to group students in five broader categories (see section 3.1, page 13).

Table 3.5: Respondents Ethnic Background

Ethnic Grouping	Number	% of Total Respondents
White	558	48%
Black or Black British	86	8%
Dual Heritage	16	1%
Asian	373	32%
Chinese/Other	110	10%
Did not want to say	11	1%
TOTAL	1154	

The ethnicity of respondents to the two surveys and comparisons to the UCAS application data is summarised in Table 3.6.

Table 3.6: Ethnicity of respondents to 1st and 4th year careers questionnaires.

	1st year Questionnaire data (%)	2003 UCAS data (%)	4th year Questionnaire data (%)	2001 UCAS data (%)
White	42.8	39.8	55.6	35.4
Black	9.3	9.7	5	10.4
Mixed	1.4	1.3	1.4	1.3
Asian	43.1	47.0	35.2	49.7
Other	2.6	2.1	1.6	3.2
Undeclared	0.8		1.2	

From the data in Table 3.6 it can be seen that there is a fair representation of ethnicity in the respondents to the first year survey, albeit with some over-representation of white students and an under-representation of Asian students in the fourth year survey. Because of small sub-samples in several of the fields, this study has only compared the two major ethnic groups: white and Asian (see section 6.7).

Finally the age distribution of respondents is summarised in Table 3.7. It is not possible to make any sensible comparison with UCAS application data because the census data for the careers questionnaire and for UCAS entry are six months out of phase.

Table 3.7: Age of respondents to questionnaires.

Age	1st year respondents (%)	4th year respondents (%)
17 – 19	57.0	-
20 – 21	22.3	19.2
22 – 23	7.8	57.9
24 – 25	4.1	11.0
26+	8.8	12.0

3.2.6 Analysis

Data from the questionnaires were analysed following coding and entry into the Statistical Package for Social Sciences Version 12 (SPSS). Valid responses were used throughout the results section. Non-parametric statistical tests were applied to the nominal data and where applicable, the continuity correction for Pearson's chi-squared test was employed to investigate whether there was a statistically significant association between variables.

3.2.7 Ethical Approval

The survey questionnaire was approved by Aston University Ethics Committee. Two other schools required additional institutional approval prior to distribution and in both cases this was granted.

3.2.8 Report Presentation

The results in this report are presented in a consistent format, giving comparisons between year one and year four; male with female; ethnicity differences – white and Asian. Further in depth interrogation will be undertaken for journal and conference presentations.

4. ANALYSIS OF UNDERGRADUATE ENTRY DATA

4.1 General Applicant Data

Table 4.1 summarises application and acceptance data for UK schools of pharmacy over the six year period from 1998 to 2003, which at the time of writing this report was the last available data set. Main scheme applicants are those who apply through UCAS and conform to all UCAS deadlines. The majority of clearing candidates are those who are not accepted by their firm choice (CF) institution or their insurance choice (CI) institution. A smaller number ask to be released into clearing by both their CF and CI institutions once their A level grades are published. UCAS Extra applicants are those that are rejected by their first six choices of institution during the application process and so may choose a seventh to apply to, usually late in the application process (April through to June). UCAS extra started in 2003.

Table 4.1: Summary of applicant data to pharmacy 1998-2003.

Year	Total Applicants	Accepted in Main scheme (% of applications)	Accepted in Clearing	Accepted in UCAS Extra	Total Accepted (% of applications)
1998	3,185	1,600	226	N/A	1,826 (57%)
1999	3,107	1,689	218	N/A	1,907 (61%)
2000	3,234	1,711	218	N/A	1,929 (60%)
2001	2,804	1,688	380	N/A	2,068 (74%)
2002	2,772	1,840	375	N/A	2,215 (80%)
2003	3,140	1,989	355	34	2,378 (76%)

The number of applicants to pharmacy has remained relatively stable since 1998, with a low of 2,772 in 2002. Intakes over the same period have increased with an increase in both the number of students accepted in the main scheme and the total taken through clearing. In 1998, 57% of those who applied to study pharmacy were accepted onto a pharmacy degree course in the then 16 UK Schools of Pharmacy. By 2003, this figure had risen to 76%. In 1998, 12% of the total intake to UK schools of pharmacy came from the UCAS clearing scheme and by 2003 this has increased to 15%.

The total main scheme applications for pharmacy include all who enter pharmacy on their application form. The number therefore overstates the committed pharmacy applicants since it will include students who are including pharmacy as a fall back subject rather than their first preference. This is particularly the case with applicants for medicine who are advised by medical schools not to use all their applications for medicine. Given that a significant number of applicants will also not achieve minimum entry qualifications, the increase in clearing intake from 2001 onwards is likely to reflect saturation of the primary applicant pool.

Three new schools opened in 2004, with an intake of approximately 80 students each, taking the number of accepted applicants to just over 2,500. It is anticipated that a further four to six new Schools of Pharmacy will be open by October 2006, each with the potential to take up to 150 more students onto MPharm programmes. The data presented above suggests that these intakes will only be achieved if there is an increase in the applicant pool. The alternative will be a significant decline in entry qualification.

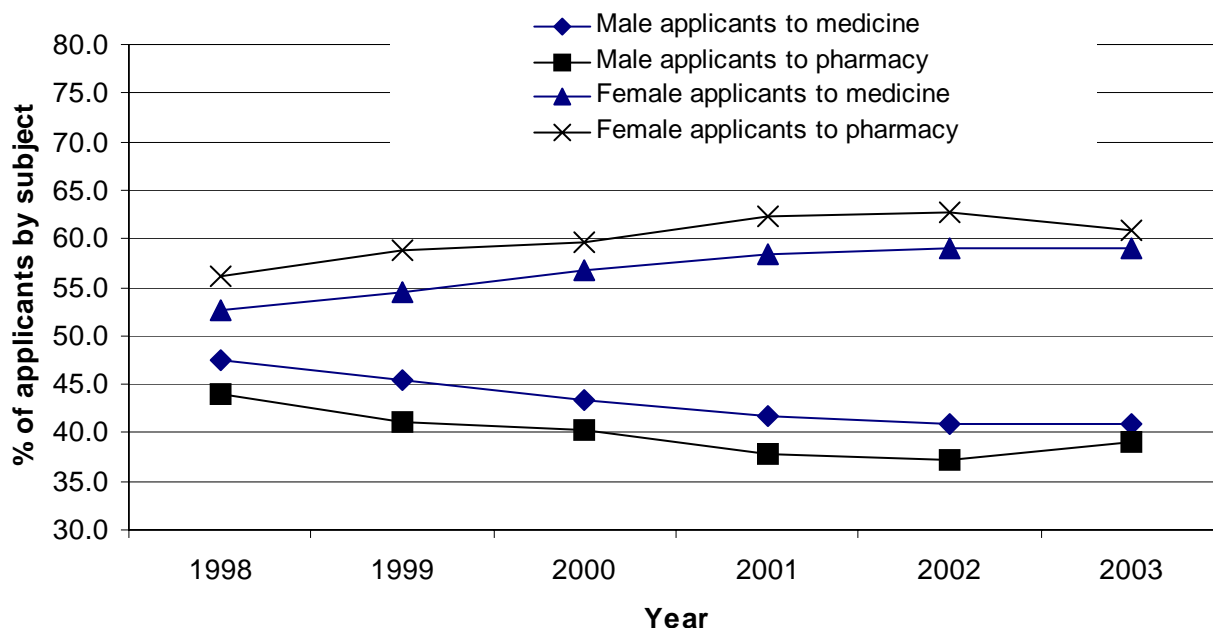
4.2 Gender

In 1998, 43.9% of applicants to pharmacy were male, with 56.1% female. A similar proportion was evident in applications to medicine in 1998, with 47.4% being male and

52.6% being female. An upward trend in female applicants to both subjects was seen until 2003, when a slight downturn was seen. At the highest point (2002) 62.7% of applicants to pharmacy courses were female; in 2003 this fell to 60.9%.

A similar pattern was seen in the applicant pool for medicine. Trends in the gender of applicants to pharmacy, compared with that to medicine since 1998 are shown in Figure 4.1.

Figure 4.1: Trends in the gender of applicants to medicine and pharmacy 1998-2003.

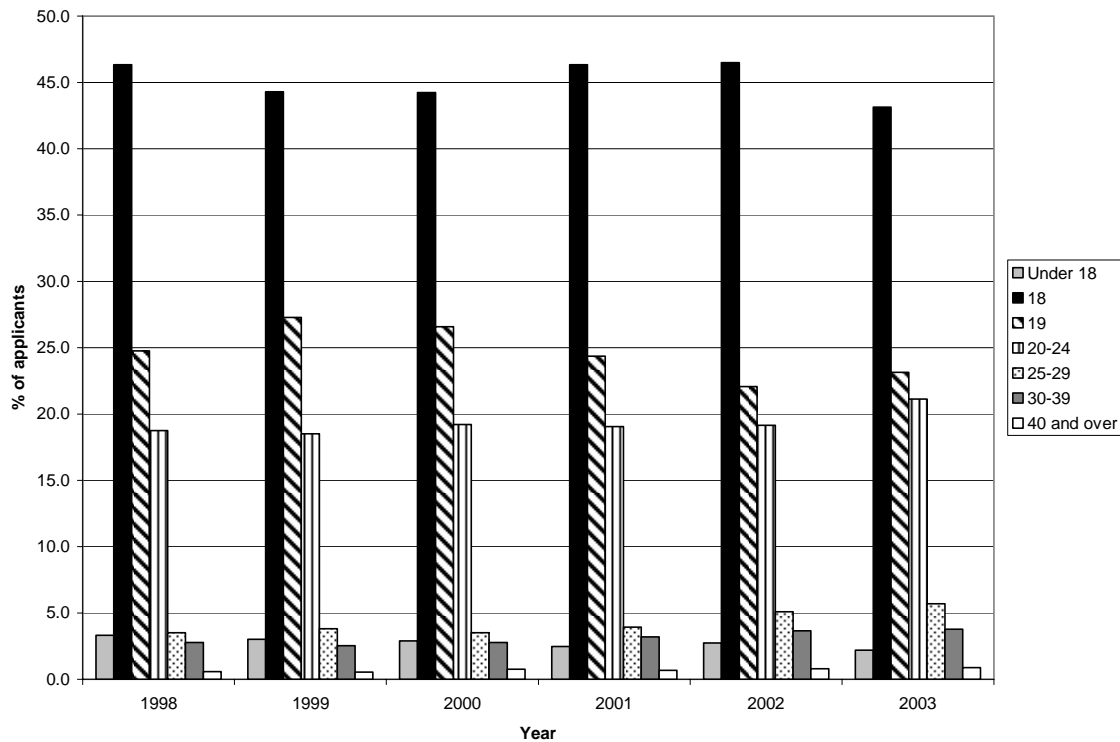


4.3 Age

Over the six year period 1998-2003, the 18 year old age group has consistently formed the highest proportion of applicants to pharmacy, with approximately 45% of applicants (Figure 4.2). This proportion has remained relatively static. In 1998, 50% of applicants to medicine were from this age group, but this proportion has dropped steadily to 44% in 2003. This may be accounted for by the new four year medicine courses, entry to which requires a previous undergraduate degree, therefore increasing the age of applicants to medical degrees.

Pharmacy consistently attracts a large proportion of 19 year old applicants (on average 25% of applicants to pharmacy). In 1998, 21% of applicants to medicine were aged 19, but this has dropped dramatically to 15% in 2003. This difference may again be due to the increase in older applicants to medicine (22% of applicants in 2003 were from the 20-24 year old age group, compared to 17% in 1998). A high proportion of 19 year old applicants is consistent with a subject that has high UCAS entry qualifications where a proportion of students repeat their A-level examinations to attain the required grades. It is also consistent with a subject that has a significant "second choice" applicant pool who fail to get into their preferred option on the first round. In the case of pharmacy it is likely that both these factors contribute but it is notable that almost one third of respondents to the both the first and fourth year questionnaires (27.4% 1st years and 28.9% fourth years) stated that pharmacy was not their first and only choice of career. In both years, just less than half of the respondents who did not consider pharmacy a first choice had applied to medicine (49.4% of these first year respondents and 41.7% of these fourth year respondents).

Figure 4.2: The age of applicants to pharmacy degree courses 1998-2003.

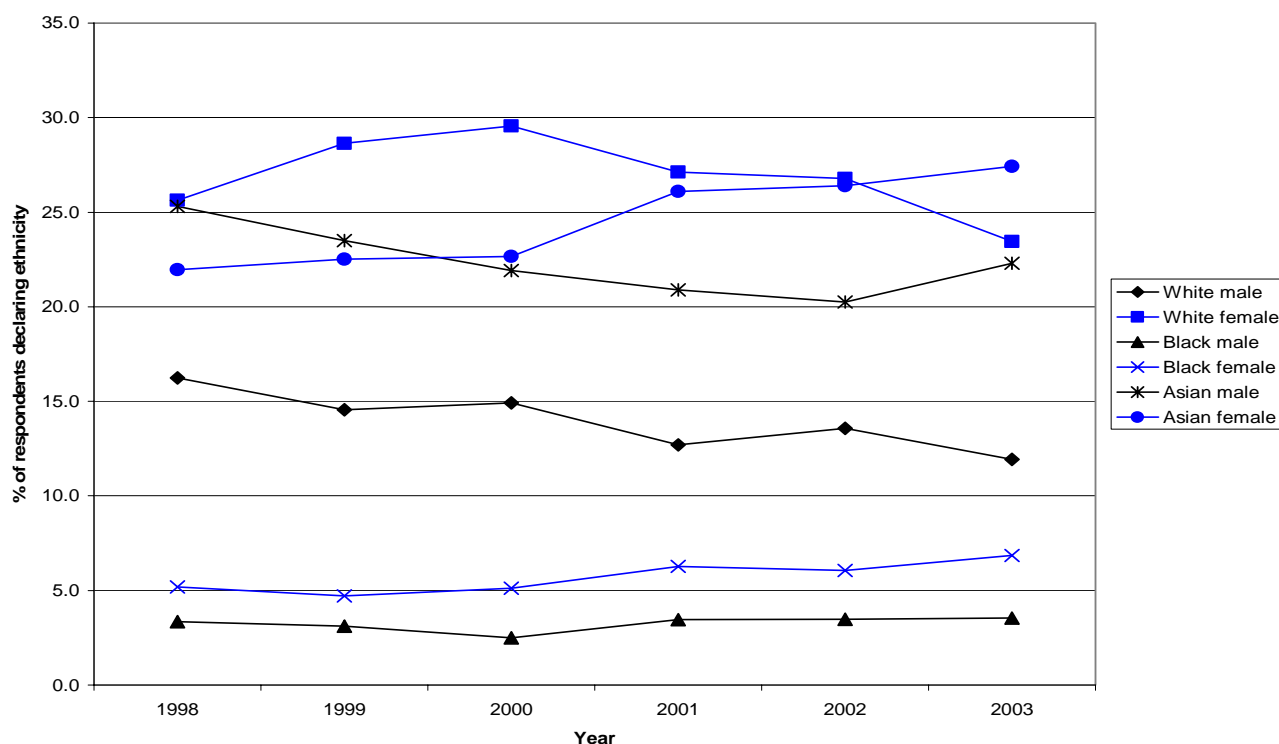


4.4 Ethnicity

Over the six year period 1998-2003, an average of 40% of applicants to pharmacy degree courses were from a white background, compared to 66% of applicants to medicine. In the case of pharmacy, there has been a downward trend in white male applicants (1998, 16.2% of applicants were white males, dropping to 11.9% in 2003). The number of white male applicants to medicine is much higher (on average 25% of applicants over the six year period of 1998-2003) and has remained relatively static.

47% of applicants to pharmacy over the same period were from an Asian background, compared to only 25% of applicants to medical courses. The number of male Asian applicants to pharmacy has remained relatively stable (25.3% of applicants at its highest in 1998, 20.3% at its lowest in 2002, rising to 22.3% in 2003). There has been an increase in Asian female applicants to pharmacy with 22% of applicants in 1998, rising to 27.4% in 2003. Pharmacy also consistently attracts a higher proportion of black applicants (average 9%) when compared to medicine (average 4.4%). The trends in the ethnicity of applicants to pharmacy are shown in Figure 4.3.

Figure 4.3: Trends in ethnicity of applicants to pharmacy degree courses 1998-2003.



4.5 Socio-economic Background

The social class measure used by UCAS is based upon an applicant's parental occupation, or the occupation of the person contributing the highest income to the household if the applicant is aged 21 years or over. The categories of Social Class used up until 2002 are outlined in Table 4.2.

Table 4.2: Social Class as used by UCAS prior to 2002.

Social Class	Description
I	Professional, etc. occupations
II	Managerial and Technical occupations
III N	Skilled occupations – non-manual
III M	Skilled occupations – manual
IV	Partly skilled occupations
V	Unskilled occupations

In the four year period 1998 to 2001, the majority of applicants to pharmacy degree courses and medical courses came from Social Class II (Intermediate). However, whilst on average 37% of applicants to medicine came from Social Class I (Professional) for pharmacy the proportion was 20%. For pharmacy, 41% of applications came from the bottom four social classes compared with 24% for medicine. These differences are summarised in Figure 4.4.

Figure 4.4: Percentage of applicants from each of the UCAS social class codes for Medicine and Pharmacy 1998 to 2001.

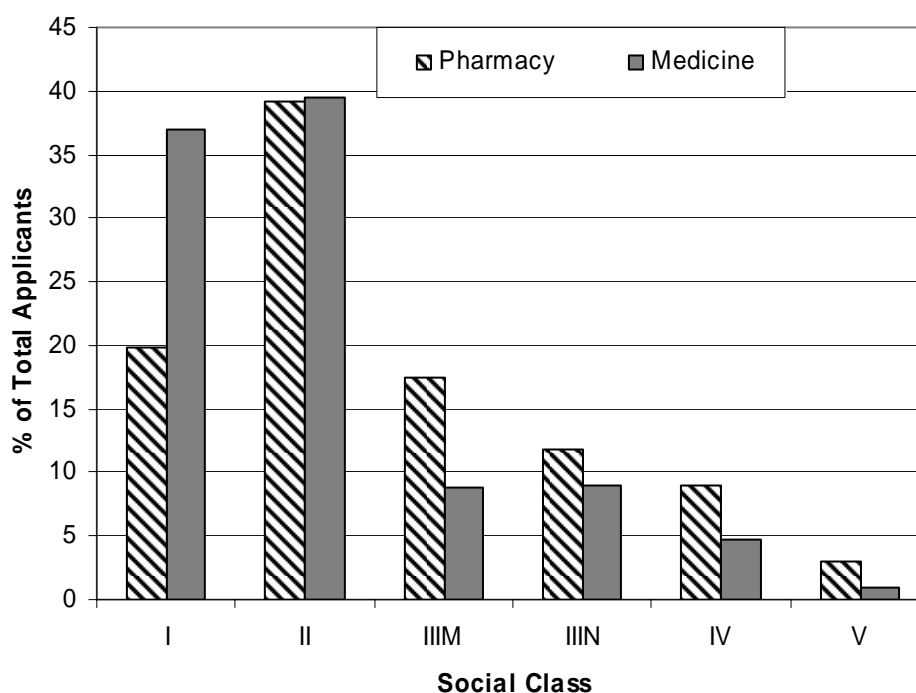


Table 4.3 summarises the socioeconomic data for both medicine and pharmacy by year between 1998 and 2001.

Table 4.3: Comparison of socio-economic background of applicants to pharmacy and medicine 1998-2001 (Pharm: Pharmacy; Med: Medicine).

Social Class	1998 (%)		1999 (%)		2000 (%)		2001 (%)	
	Pharm	Med	Pharm	Med	Pharm	Med	Pharm	Med
I Professional	19.7	36.8	19.3	36.5	20.7	37.1	19.4	37.4
II Intermediate	38.9	39.7	38.2	39.1	38.5	39.2	40.9	39.7
IIIM Skilled manual	16.7	8.8	18.2	8.9	16.8	9.1	17.9	8.7
IIIN Skilled non-manual	11.6	8.6	11.9	9.5	12.2	9.1	11.2	8.8
IV Partly skilled	9.4	5.1	9.5	4.9	8.7	4.5	8.0	4.6
V Unskilled	3.7	1.0	2.9	0.9	3.1	1.0	2.5	0.8

From 2002 onwards, UCAS moved to the NS-SEC categories for definition of social class of applicant (see Table 4.4).

Table 4.4: NS-SEC (Eight-class version) as used by UCAS from 2002 onwards.

NS-SEC Classification	Description
1	Higher managerial and professional occupations
2	Lower managerial and professional occupations
3	Intermediate occupations
4	Small employers and own-account workers
5	Lower supervisory and technical occupations
6	Semi-routine occupations
7	Routine occupations

In 2002 and 2003, with the change to the NS-SEC classification (see Table 4.4), one third of applicants to pharmacy came from NS-SEC 2 (Lower managerial and professional occupations) and 21% from NS-SEC 1 (Higher managerial and professional occupations). In contrast, 42% of applicants to medical degree courses came from NS-SEC 1 and 31% from NS-SEC 2 (Table 4.5).

Table 4.5: Comparison of socio-economic background of applicants to pharmacy and medicine 2002 and 2003.

Social class	2002 applicants (%)		2003 applicants (%)	
	Pharmacy	Medicine	Pharmacy	Medicine
Higher managerial and professional occupations	20.9	42.9	22.3	41.4
Lower managerial and professional occupations	29.6	29.8	29.2	31.2
Intermediate occupations	11.6	11.3	11.5	11.2
Small employers and own account workers	9.7	4.5	10.2	4.5
Lower supervisory and technical occupations	4.4	1.9	4.4	2.4
Semi-routine occupations	17.2	7.2	16.2	6.9
Routine occupations	6.5	2.5	6.3	2.4

4.6 Summary of Key Findings.

- The total UCAS applicant pool for pharmacy over the period 1998 to 2003 was steady despite a 30% increase in intakes to the 16 established schools of pharmacy. Over this period there has been an increased dependence upon intakes from clearing and there is evidence to suggest that the applicant pool is saturated. Unless new schools attract a new entry pool, the expansion of the total entry numbers has implications for entrance standards and entry quality.
- The majority of applicants (circa 60%) for pharmacy were female and the proportion increased progressively over the period 1998 to 2003. Similar trends were observed for applications to medicine.
- The majority of applications for pharmacy were from students in the 18-19 year group with only small numbers of applicants (less than 10%) over the age of 25. The single largest age group of applicants were aged 18 (around 45% of total) with around 25% of the pool aged 19. This is consistent with a traditional university subject attracting applications primarily from sixth forms and colleges. The relatively high proportion of 19 year old applicants is consistent with a subject with high entry grades and a significant proportion of applicants for whom it is a second choice subject. The age profile of applicants for pharmacy and medicine are broadly similar.
- Over the period 1998 to 2003, more than 90% of the applicants to pharmacy were either white or of Asian background. Total applications from Asian students (average 47% of pool) exceed those from white students (average 40% of the pool). Applications from white males have declined consistently throughout this period to around 12% of the total pool and applications from white females have been in decline since 2000. There has been a slow increase in the proportion of black applicants. There was notable difference in the ethnicity of the pharmacy applicant pool compared to that for medicine. Over this time period, the proportion of Asian (25%) and black (4%) applications for medicine was almost half those for pharmacy, while white applications for medicine were steady.
- Assessment of socio-economic data of UCAS applicants is complicated by the change in methodology by UCAS in 2002. Overall, there were major differences

between the applicant pool for pharmacy and medicine. Pharmacy had half the proportion of applicants in the highest socioeconomic grouping compared with medicine but twice as many in the lowest socioeconomic groupings. In 2002 and 2003, just under half of the total applications for pharmacy were from students in the “non-professional” socioeconomic groupings.

5. SURVEY OF MPHARM STUDENTS

5.1 Motivations and Influences

In this section of the survey we presented all the extrinsic and intrinsic motivators identified in previous studies and in our own preliminary focus groups. To avoid complexity we divided them into three categories: education related, personal influences and personal career goals.

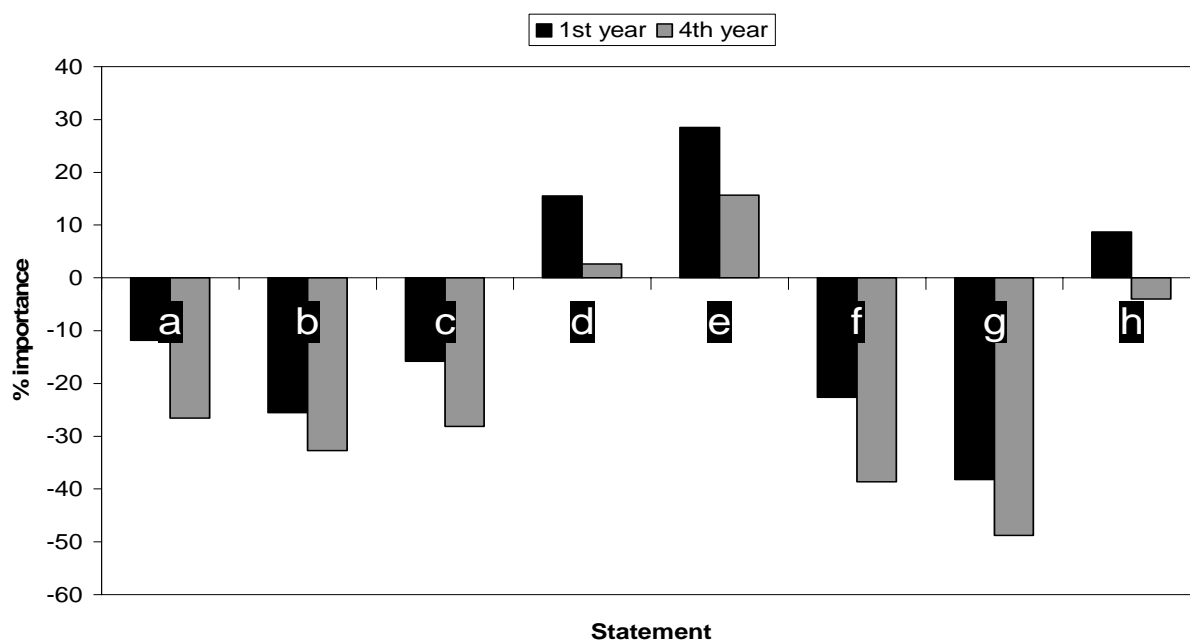
5.1.1 Education Related Influences

Respondents were asked how important a set of education related factors were to their decision to study pharmacy. Answers were on a four-point Likert scale. To simplify the factors results have been summarised in Figure 5.1 as the difference between the percentage of respondents rating the factor as important and the percentage rating it as not important (i.e. the difference between the two extremes).

It should be noted that the 4th years are thinking retrospectively, and therefore the decision process is probably less clear in their minds. For both the 1st year and 4th year respondents, three factors showed as net positive in terms of importance: a university prospectus, a university open day visit and careers leaflets or booklets. The least important factor for both 1st and 4th year respondents was a radio or TV programme. The RPSGB was not perceived as important. There was no significant association of response with gender for any of the statements.

Comparing the relative order of importance of the factors, the responses of all white and of all Asian students was exactly the same. However, with the exception of a university prospectus, Asian students attributed more importance to each factor. For example, in the case of the third most important factor, careers leaflets or information, 20% (n=112) of white respondents rated this as important and 30% (n=165) as not important compared with 31% (n=116) of Asian respondents who rated it as important and 16% (n=60) who rated it as not important (Chi, $p < 0.01$ at least).

Figure 5.1: Importance of education related reasons why people choose to study pharmacy. Results are shown as the difference between the % of respondents who rated as important and the % who rated as not-important.



Key:

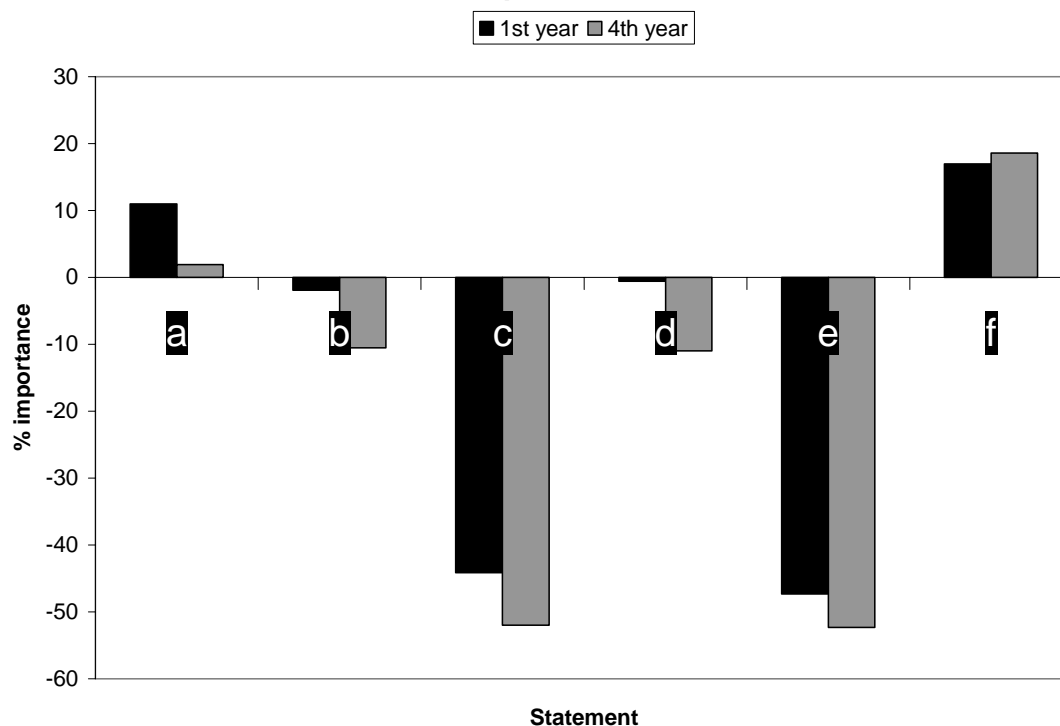
a	A subject teacher at school / college
b	A careers teacher at school / college
c	A visit to a careers fair / conference
d	A visit to a university open day
e	A university prospectus
f	Royal Pharmaceutical Society of Great Britain literature
g	Radio or TV programme
h	Careers leaflets or booklets

5.1.2 Personal Influences

Students were asked to state how important a set of personal factors were to their decision to study pharmacy. The results are summarised in Figure 5.2 as the difference between the % of respondents who rated as important and the % who rated as not-important.

Both the 1st and 4th year respondents stated that the most important personal factors for choosing to study pharmacy were: the influence of pharmacy work experience and parents encouraging them to study. The least important factors were: the influence of friends and a family member owning a pharmacy.

Figure 5.2: Importance of personal reasons why people choose to study pharmacy. Results are shown as the difference between the % of respondents who rated as important and the % who rated as not-important.



Key:

	Reason
a	My parents encouraged me to choose pharmacy
b	My family encouraged me to choose pharmacy
c	Someone in my family who owns a pharmacy influenced me
d	I was influenced by a pharmacist I know, as a role model
e	My friends influenced me
f	I was influenced by pharmacy work experience

There were some significant differences between responses of males and females. 17.8% (n=61) of males, compared to 9.6% (n=77) of females agreed that statement (c) (someone in my family who owns a pharmacy influenced me) was an important personal influencing factor (Chi, $p \leq 0.001$). Differences were also seen in perceptions of “Pharmacy work experience” as an influencing factor. 45.7% (n=368) of females agreed that this was an important factor, compared with 34.9% (n=119) of male respondents rating this factor as important (Chi, $p < 0.01$).

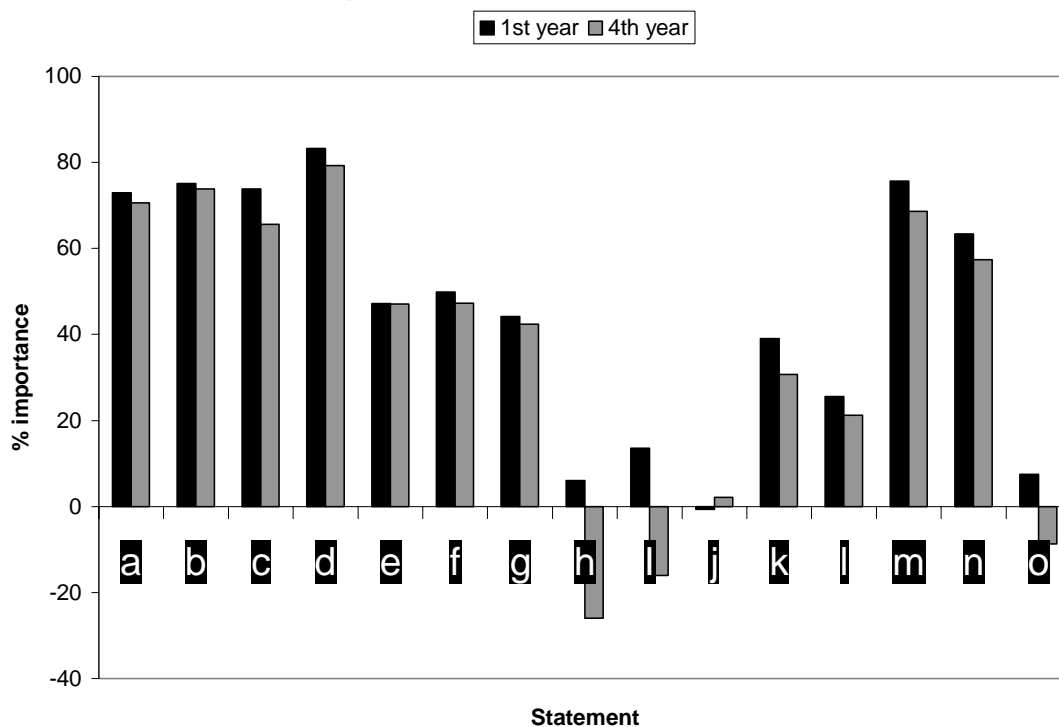
When responses of all white and of all Asian students were compared, the order of importance of the factors was exactly the same. However, with the exception of the factor “I was influenced by a pharmacist I know, as a role model”, there was a significant difference in the distribution of responses for each factor with white or Asian background. In all but one of these cases, students of Asian background placed higher importance upon the factors than did white students (Chi, p at least < 0.01). For example, the second most important factor “my parents encouraged me to choose pharmacy” was rated important by 24% (n=131) of white students and by 33% (n=121) of Asian students (Chi, $p < 0.01$). The exception was the factor most highly rated by all students, “I was influenced by pharmacy work experience”.

This was rated as important by 50% (n=278) of white students compared with 40% (n=147) of Asian students (Chi, p <0.01).

5.1.3 The Influence of Personal career goals on Career Choice

We were interested in the aspects of a career in pharmacy that most strongly influenced the respondents in their decision to choose to study pharmacy (see Figure 5.3). The same career factor emerged as the most important to both the 1st and 4th year sample respondents: “I wanted a job with good career opportunities”. The next four most important factors for the whole study sample were: “I wanted a profession where you can always get a job”, “I wanted to do a science based course”, “I wanted to work in a well respected profession”, and “I liked science/was good at science at school”.

Figure 5.3: Career aspects as influences on decision to study pharmacy. Results are shown as the difference between the % of respondents who rated as important and the % who rated as not-important.



Key:

a	I liked science / was good at science at school
b	I wanted to do a science based course
c	I wanted to work in a well respected profession
d	I wanted a job with good career opportunities
e	I thought pharmacy would be intellectually satisfying
f	I wanted a job where I am socially useful
g	I wanted to work with patients
h	I wanted to own my own business
i	I wanted the opportunity for self-employment
j	I wanted the opportunity for part time work

k	I was attracted by the financial rewards
l	I wanted flexible working hours
m	I wanted a profession where you can always get a job
n	I wanted to work with medicine or in the medical profession
o	I wanted to study medicine/dentistry or another medically related subject

There was a significant association between gender and the response to six of the statements (Chi, p at least <0.01). A greater proportion of females than of males were influenced by wanting a job that is socially useful, to work with patients, to work flexible hours and by the opportunity to work part time. Conversely, a larger proportion of males were influenced by wanting to own their own business and wanting the opportunity for self-employment. These differences are exemplified in Table 5.1 below as the percentage males and females who considered that they were strongly influenced by each factor.

Table 5.1: Six Factors that influenced First and Final Year Students in their choice of Pharmacy where there was a significant difference between responses of male and female students. Results are shown as the percentage of students strongly influenced by each factor.

Statement	Male Respondents	Female Respondents
I wanted a job where I am socially useful	46% (n=158)	55% (n=440)
I wanted to work with patients	41% (n=141)	55% (n=438)
I wanted the opportunity for part-time work	17% (n=58)	27% (n=220)
I wanted flexible working hours	28% (n=95)	38% (n=306)
I wanted to own my own business	30% (n=104)	19% (n=156)
I wanted the opportunity for self-employment	35% (n=120)	22% (n=176)

5.1.4 Summary of key findings

- When presented with a group of extrinsic influences relating to the educational decision to study pharmacy, students said they were most influenced by the university marketing, by the university prospectus and the open day visit. This suggests that the place of study has a very significant influence and that university publicity is a key influencing factor that will determine the nature of the pharmacy applicant pool.
- In contrast, the professional body for pharmacy (RPSGB) was a very weak influence upon student's decision to study pharmacy and therefore upon the nature of the pharmacy applicant pool. This has significant implications for the profession since it limits the capacity of the RPSGB to communicate changes in professional need or function to the potential applicant pool.
- The study confirms many previous reports on the importance of parents in the choice of career study. This was one of only two personal factors that showed a net influence upon student choice.
- The strongest extrinsic influence on motivation in this section was pharmacy work experience. The extent to which this is representative of future pharmacy is therefore a significant factor in the supply of an appropriate future workforce. One key issue is the limited capacity for work experience outside the community pharmacy sector.

- Intrinsic factors related to students own attributes (liking for science, ability in science) and factors in the 'what I want for myself' category (good career opportunities, well respected profession, medical related profession and employment) were considered the most important influences upon the decision to study pharmacy. The importance placed upon these factors demonstrates a strong component of rational choice in the decision to study pharmacy but raises the issue that applicants are likely to be strongly deterred from pharmacy if doubt arises as to employment or future career opportunities.
- The differences in views between year 1 and year 4 were smallest in relation to the intrinsic factors related to personal attributes and career characteristics. However, it is at this point that we can observe motivational differences between male and females. Females are more socially oriented and thinking ahead to the work life balance they want to make. Males are interested in opportunities for independence, through ownership or self employment.
- The choice of pharmacy as a career to study fits with rational choice theory. The reasons considered most important were objective ones that related to self-interest, both in terms of the nature of the degree course and the advantages conferred by the degree. However, there was evidence that for female students, future patterns of working that are not central to career progression were considered more important than for males (e.g. flexible working).

5.2 Choice of School of Pharmacy

Having established that the first impression made by the school is important the survey looked more deeply at students' personal commitments to joining the pharmacy profession.

5.2.1 Commitment to Pharmacy as a Course

73% of 1st year respondents and 71% of 4th year respondents stated that pharmacy was their first and only choice when they chose what subject to study at university. There was no difference between males and females: 74% (n=255) of males and 72% (n=577) stated pharmacy was their first and only choice. However, a smaller proportion of Asian students (69%, n=256) than white students (78%, n=432) stated pharmacy to be their first choice (Chi, $p < 0.01$). So nearly a quarter of students had another career in mind.

Table 5.2 summarises the reasons given for studying pharmacy as a second choice. Of the 1st year respondents who stated that pharmacy was not their first and only choice (n=180), the largest single group (49%) stated that pharmacy was their second choice to medicine. This was the same for the 4th year respondents (n=147), with 36% stating that medicine was their first choice.

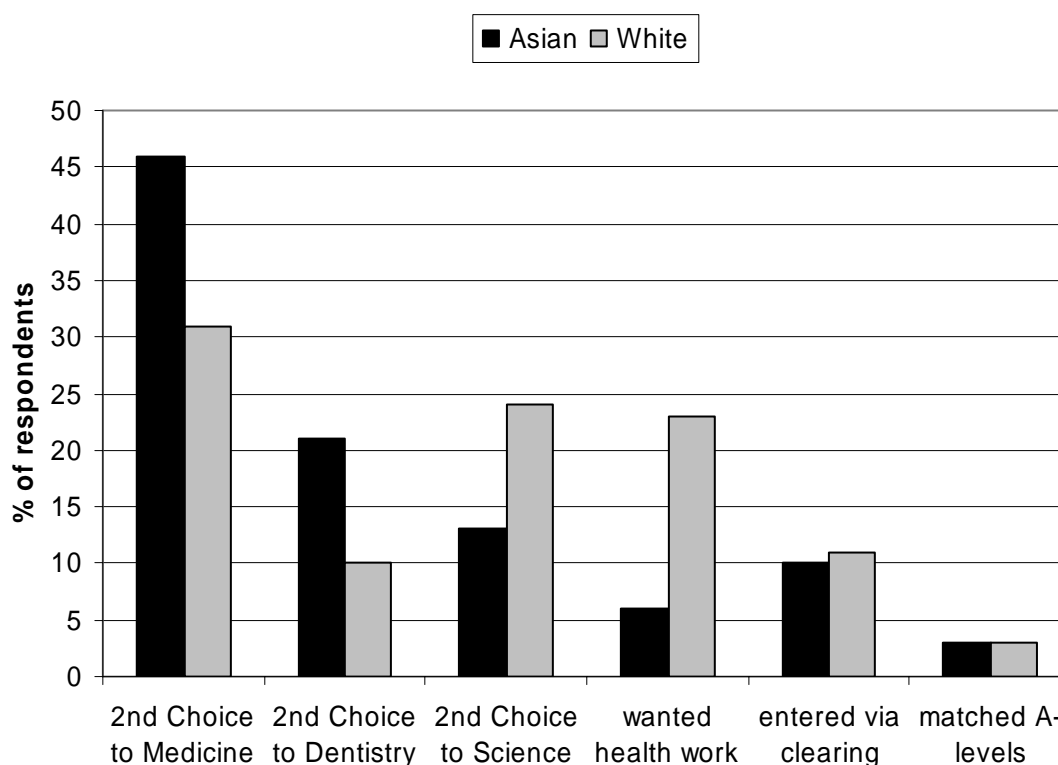
Table 5.2: Reasons for studying pharmacy as a second choice. Results are shown as % of respondents.

Reason	1 st year (n = 180)	4 th year (n = 147)
Pharmacy was my second choice to medicine	49.4%	35.8%
Pharmacy was my second choice to dentistry	15.7%	11.9%
Pharmacy was my second choice to another science degree	7.6%	23.9%

I wanted to work in any health related field	14.0%	16.4%
I came into pharmacy through clearing	10.5%	9.0%
Pharmacy matched the A Levels I was taking	2.9%	3.0%

There was no association between gender and the reason for studying pharmacy as a second choice. However the distribution of responses from Asian compared with white students was significantly different (Chi, $p < 0.001$) (see Figure 5.4).

Figure 5.4: Reasons for studying pharmacy as a second choice compared for white and Asian students. Results are shown as % of respondents.



Although medicine was the principal first choice subject for both Asian and white students, a large proportion of Asian students than white named it as their first choice. There were also differences in the proportion of Asian and white students who identified dentistry (more popular with Asian students) and science and health subjects (more popular with white students).

5.2.2 Route of Entry to the Pharmacy Course

The proportion of Asian and white students who selected “entry via clearing” as a reason for entering pharmacy as a second choice subject was about 10% of the total for each subgroup (see Table 5.2). This is lower than the UCAS data for clearing entry (around 15% - see section 5.1, page 25). However, when asked about how they entered their course, 16% of all respondents (first and final year) responded with clearing, which matches the UCAS data (see Table 5.3). Therefore entry via UCAS is not synonymous with second choice of pharmacy as a career. It appears likely that a number of clearing entrants did have pharmacy as first choice but were unable to obtain an offer of a place in the first round.

Approximately 70% of both 1st and 4th year respondents came to their School of Pharmacy (SOP) as their first choice institution (UCAS CF), with a further 13% as their insurance choice (UCAS CI) (Table 5.3).

Table 5.3: Respondents route of entry into their school of pharmacy shown as % of respondents.

Reason	1st year	4th year	Total Sample
Firm choice (CF)	72%	69%	71%
Insurance choice (CI)	14%	12%	13%
Entry through clearing	14%	19%	16%
Unconditional Firm (UF)	0%	0%	0%

These figures for entrants through clearing are very similar to the UCAS applicant data; 18% of 2001 entrants to pharmacy came through clearing (corresponding to the 4th year sample) and 14% of 2003 entrants to pharmacy came through clearing (corresponding to the 1st year sample). There was no significant association of route of entry with gender of applicants. However, there was a significant association with ethnicity (Chi, $p < 0.001$). Fewer Asian applicants entered as firm choice candidates (63%, $n=232$) than white students (78%, $n=428$) and more entered through clearing (22%, $n=82$) than did white students (11%, $n=61$).

5.2.3 Choice of School of Pharmacy

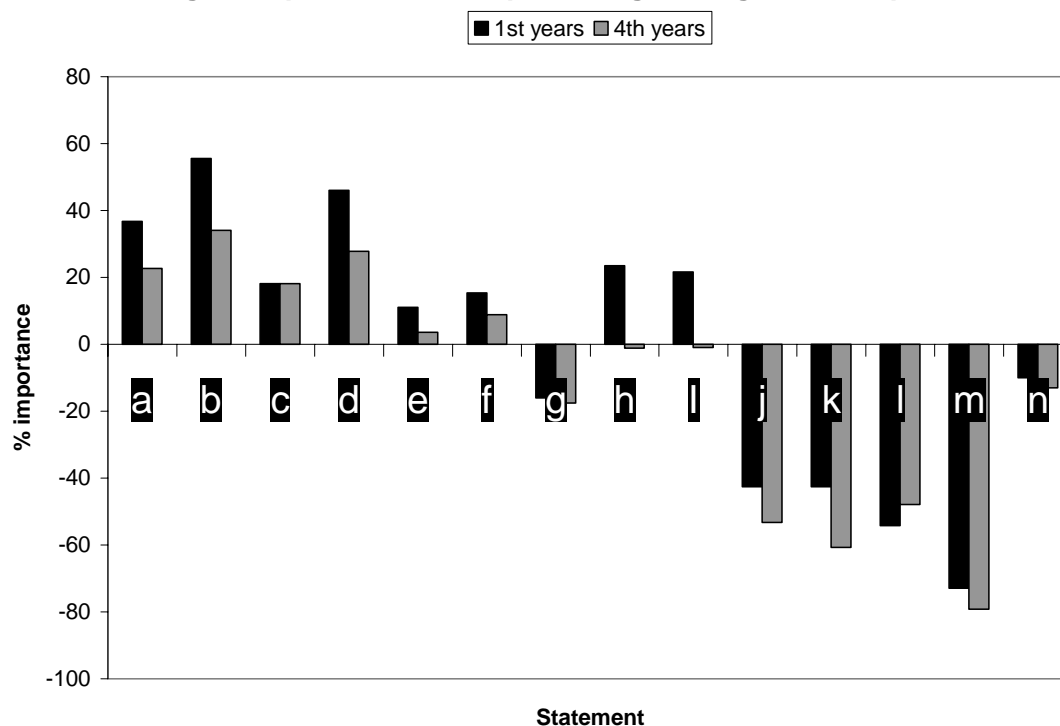
Respondents were asked to state the importance of the influence of aspects of schools of pharmacy on their choice of institution for study. These are summarised in Figure 5.5.

The three most important factors for choosing a school of pharmacy for both 1st and 4th year respondents were: reputation of the school of pharmacy, reputation of the university and the nature of the course as described in the prospectus.

The least important aspect when choosing a school of pharmacy for both 1st and 4th year sample respondents was that of having family at the university.

There was a significant association between gender and the responses to five of the options. Females were more influenced by the nature of the course as described in the prospectus (Chi, $p < 0.001$), the reputation of the university (Chi, $p < 0.005$) and the location of the university in relation to their home (Chi, $p < 0.005$). Males were more influenced by friends at the school of pharmacy (Chi, $p < 0.001$) and family at the university of study (Chi, $p < 0.001$).

Figure 5.5: Importance of aspects of schools of pharmacy on influencing the choice of institution for study. Results are shown as the difference between the % of respondents rating as important and the percentage rating as not important.



Key:

	Reason
a	Nature of the course as described in the prospectus
b	Reputation of the school of pharmacy
c	An open day visit to the university
d	Reputation of the university
e	Reputation of the city/town where the university is located
f	Location of the university in relation to where I lived
g	Availability of accommodation
h	University facilities
i	Personal recommendation
j	Friends at pharmacy school
k	My parents wanted me to attend this school of pharmacy
l	This was the only place I could get into
m	Family at this university
n	Matching entrance grades to predicted expectations

There was a significant association between ethnicity (white or Asian origin) and responses to nine of the options. These options fell into two groups - one associated with the University or school of pharmacy and one associated with personal factors. In relation to the former, Asians were more influenced by the “reputation of the school of pharmacy” (Chi, $p < 0.01$) and the “university facilities” (Chi, $p < 0.001$) but less influenced by “an open day or visit to the university” (Chi, $p < 0.01$). They were also more likely to agree that “this was the only place I could get into” (Chi, $p < 0.01$). The personal factors where there was a significant difference in response were: “personal recommendation” (Chi, $p < 0.001$), “friends at the school of pharmacy” (Chi, $p < 0.001$), “my parents wanted me to attend this school of pharmacy” (Chi,

p<0.001) and “family at the school of pharmacy” (Chi, p<0.001). In all these the distribution of responses showed Asian students to be more influenced than white students.

5.2.4 Desire to Study Pharmacy

Respondents were asked about the strength of their desire at the time of entering pharmacy school to (a) study pharmacy and (b) be a pharmacist. Table 5.4 shows the responses.

Table 5.4: Strength of the Desire of First Year and Final Year Students to study pharmacy and to be a pharmacist. Results are shown as % of respondents.

	Very Strong	Fairly Strong	Not very Strong	Not at all strong
A. First Year Students				
To study pharmacy	57	37	5	2
To be a pharmacist	61	31	7	1
B. Final Year Students				
To study pharmacy	55	33	10	2
To be a pharmacist	53	35	10	2

These results show a high level of interest in both pharmacy and the idea of being a pharmacist with no significant difference between the responses of first year and final year students. Although the majority in of both Asian and white students indicated their desire to study pharmacy as either “very strong” or “strong”, 11% (n=40) of Asian students compared with 4% (n=20) of white students selected the response “not at all strong”. The distribution of responses was significantly different for Asian respondents compared with white respondents (Chi, p<0.05).

5.2.5 Summary of Key Findings

- We have shown that the majority of students choosing to study pharmacy have made a firm commitment to a career in the profession.
- Approximately one quarter entered pharmacy having failed to achieve entry to their first choice subject and in the majority of cases this was either a place in medical or dental school. It will be interesting to see what direction this group take later in their career.
- In the group that entered pharmacy as a second choice, there was a clear difference between Asian and white students in relation to their first choice course. More Asian than white students identified medicine and dentistry as first choices. It may be that with more medical school places coming on stream, this group will not enter pharmacy.
- Around 20% of pharmacy students entered through clearing and twice the proportion of Asian compared with white students entered via this route. The attrition and progress of this group requires further study.
- The choice of school of pharmacy was most strongly influenced by rational factors such as the reputation of the school and the university, the nature of the course and attendance at an open day. These findings reinforce the importance of the image presented to students in their publicity material.
- About half of first and final year students described their desire to study pharmacy and to be a pharmacist as very strong. There was some indication that final year

were less committed than first year students to either the study of pharmacy or being a pharmacist.

5.3 Career Image

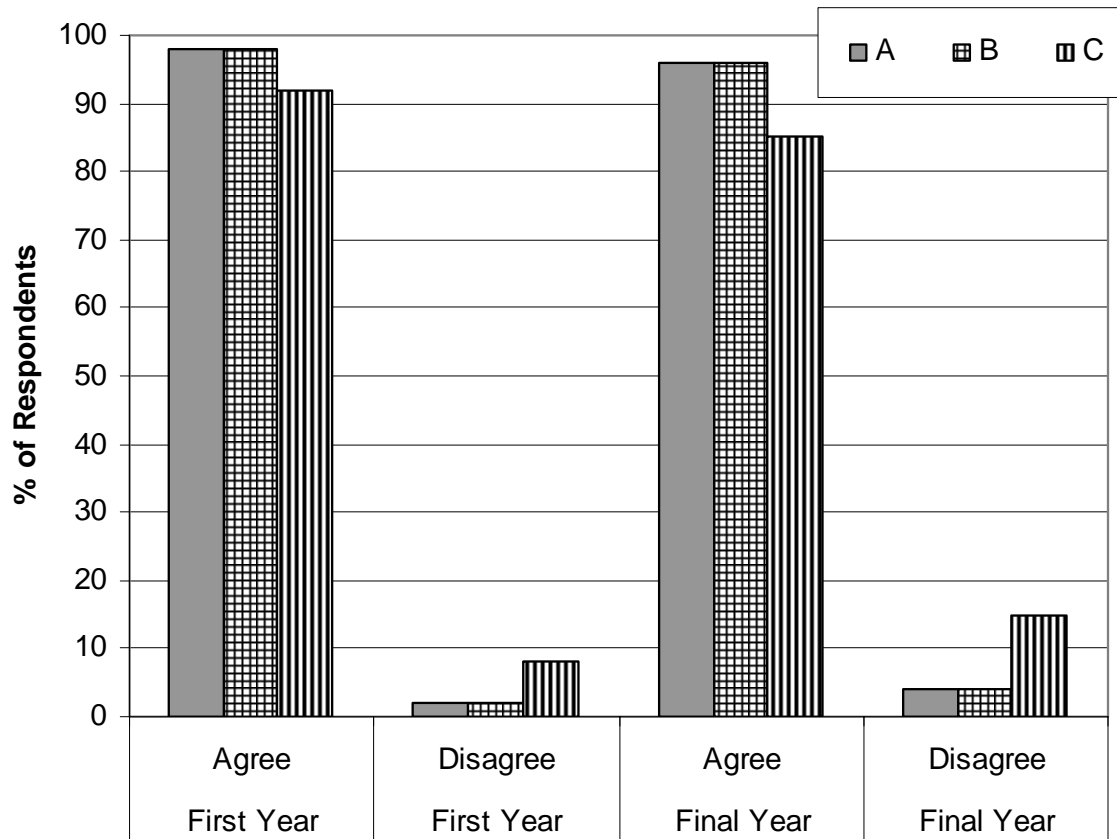
In this section we first explored two dimensions of the career image: commitment to pharmacy as a career, and attitudes to the profession (these questions based on earlier work by Rascati²⁰). Then we moved to more hypothetical issues, about external perceptions of pharmacy as a career.

5.3.1 Commitment to Pharmacy as a Career

Students were asked to indicate the level of their agreement with three statements relating to pharmacy as a career. The responses have been summarised in Figure 5.6. The responses indicated a strong commitment to pharmacy as a career with over 80% of students in both years of the programme agreeing with each of the three statements. There was no significant difference between the responses of final year and first year students. There was no significant difference in the distribution of responses to any of the questions from Asian and white respondents.

Figure 5.6: Extent of Agreement of First Year and Final Year Students with three statements (A to C) concerning their commitment to pharmacy as a career.

- A: I am proud to tell others that I am studying Pharmacy.**
- B: I am strongly committed to the values and ideals of the pharmacy profession.**
- C: Being a pharmacist is an important part of who I want to be.**

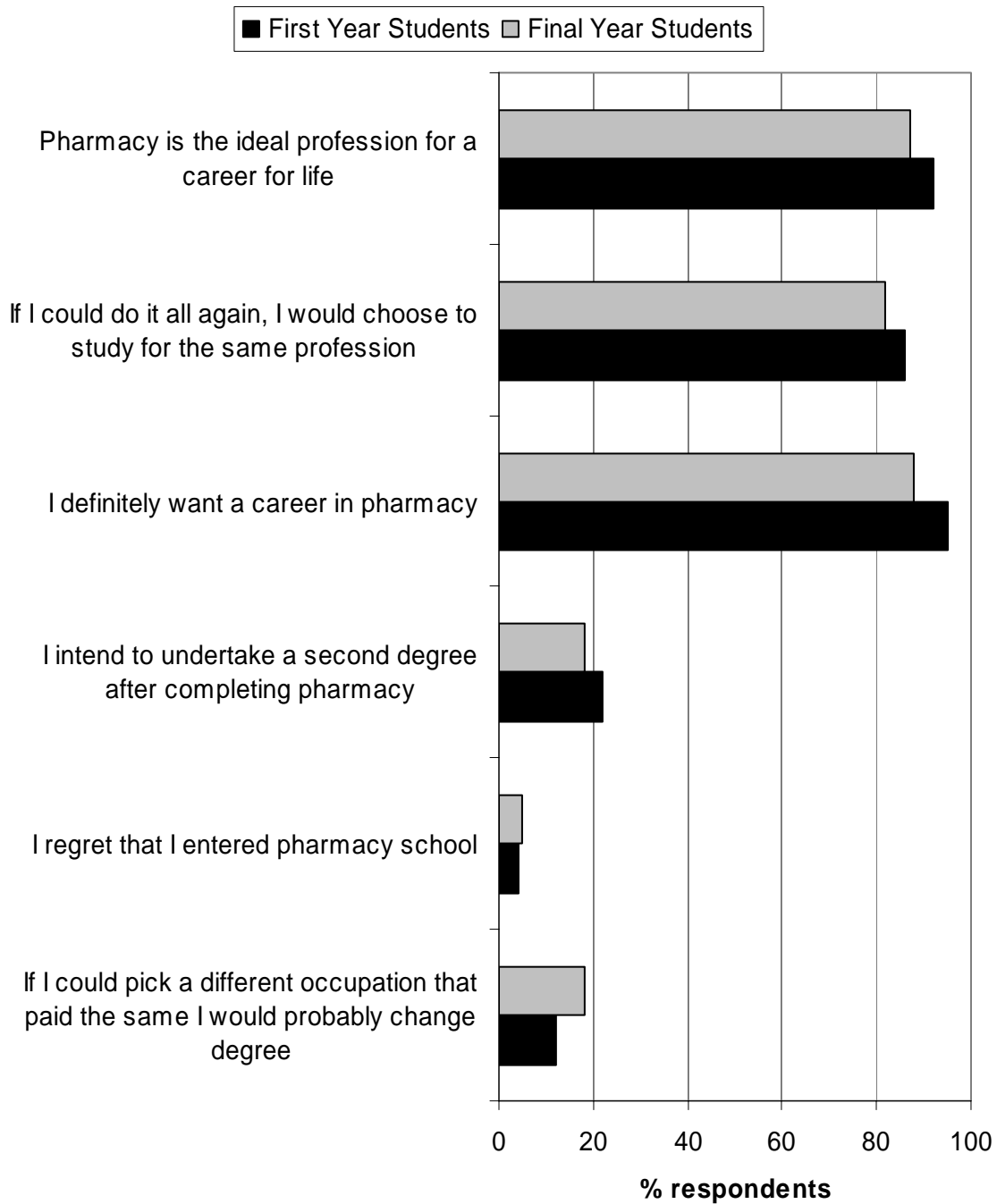


5.3.2 Attitudes about Pharmacy as a Career

Students were asked to indicate their level of agreements with 6 statements about their intentions with regard to pharmacy as a career. Figure 5.7 shows the percentage of each year that agreed with each statement, which have been grouped into those where agreement would denote a positive view of pharmacy as a career and those that would denote a negative view.

In general responses demonstrate a positive view of pharmacy as a career although 22% of first year students and 18% of final year students either agreed or tended to agree with the statement “I intend to undertake a second degree after completing pharmacy”. A clear majority (over 80%) of respondents agreed with the three positive statements D to F that they definitely wanted a career in pharmacy, they would choose the same profession again and that pharmacy is an ideal career for life.

Figure 5.7: Agreement or Strong Agreement of students with six statements concerning pharmacy as a career.



There was no significant difference between responses of first and final year students to any of the questions. There was a significant difference in the responses of female and male students to all of the statements (Chi, p at least <0.01). For each statement, female students were more in agreement than male students.

There were significant differences in the distribution of responses from Asian compared with white respondents for each of the individual questions A to F (Chi, $p < 0.05$). Asian respondents were less in agreement with questions A to C and more in agreement with questions D to F. The distribution of responses was highly significantly different (Chi, $p < 0.001$) for questions E and F. For question E, "I regret that I entered pharmacy school",

79% (n=437) of white respondents strongly disagreed compared with 65% (n=242) of Asian respondents. For question F, "If I could pick a different occupation which paid the same, I would probably change degree", 51% (n=284) of white respondents strongly disagreed compared with 46% (n=133) of Asian respondents.

5.3.3 Summary of key findings.

- In their final year of education the majority of final year students remained committed to their career in pharmacy and being a pharmacist was an important part of them. This applied regardless of gender or ethnic background.
- Approximately one in five students intended to take a second degree after completing pharmacy. This finding needs exploring in greater depth in any follow up study, to find out whether the second degree is pharmacy related or not. We noted earlier that a similar proportion had not chosen pharmacy as a first option, so it may be that this group still intend to pursue their medical ambitions.
- About 5% of students regretted entering pharmacy. This matches with the known leakage between graduation and registration.
- Students were generally positive about pharmacy as a future career and satisfied with their decision to choose it as a subject to study and as a career. Females were significantly more positive than males and Asian students were significantly less positive than white students. There are a number of possible explanations that require further research and these include the large proportion of Asian students who enter as a second choice option and the greater emphasis within this group upon future pharmacy ownership and the reducing potential for this in the current pharmacy market.

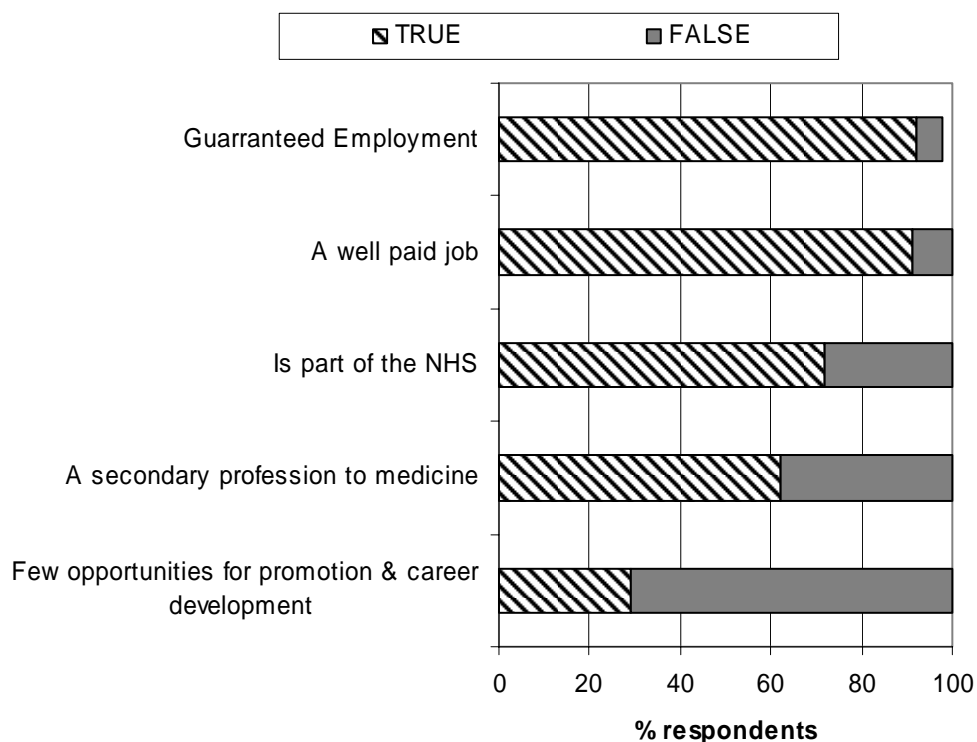
5.4 Perceptions of Pharmacy and Pharmacists

5.4.1 Perceptions of the views of Friends and Family

We were interested in the views of student's friends and family about pharmacy and about the role of pharmacists. Final year students were asked to indicate their opinion of whether their family and friends would agree or disagree with a series of statements, five about pharmacy (Figure 5.8) and four about pharmacists (Figure 5.9).

On pharmacy, there was very high agreement with two statements - that pharmacy has guaranteed employment and that pharmacy is a well paid job. The lowest level of agreement was with the intrinsically negative statement that pharmacy has few opportunities for promotion and career development. Overall the reported views were positive about the career opportunities in pharmacy.

Figure 5.8: Perceptions of final year pharmacy undergraduates of whether their parents and friends considered statements on pharmacy to be true or false.



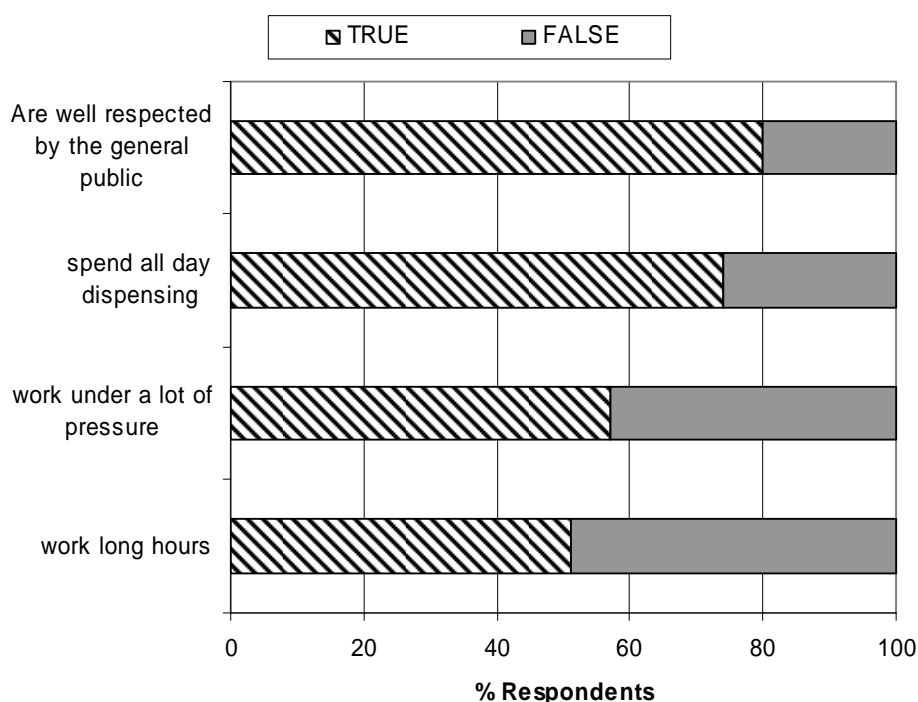
There was no difference between responses of Asian and white students to three of the statements: that pharmacy has guaranteed employment, that it is a well paid job and that it is part of the NHS. However, more Asian than white students responded that their parents and friends considered there were few opportunities for promotion and career development and that pharmacy was a secondary profession to medicine (see Table 5.5). The difference and distribution of responses for these questions was significant (Chi, $p < 0.001$).

Table 5.5: Differences in Responses of Final Year Asian and White Students about their family and friends perceptions of pharmacy as a career.

Statement	Asian Students (n=156)	White Students (n=271)
There are few opportunities for promotion and career advancement in pharmacy	40% (n=62)	22% (n=59)
Pharmacy is a secondary profession to medicine	78% (n=121)	53% (n=145)

A large majority (80%, $n=397$) responded that their friends and family would agree with the statement that pharmacists are well regarded by members of the general public. There was also strong agreement with the statement that pharmacists spend all day dispensing (74%, $n=365$). There was an equal division of views on the statement that pharmacists work long hours with 51% ($n=253$) in agreement and 49% ($n=239$) in disagreement. These results are summarised in Figure 5.9.

Figure 5.9: Perceptions of final year pharmacy undergraduates of whether their parents and friends considered statements about pharmacists to be true or false.



There were no significant differences in the responses of male and female students. There was no significant difference in the distribution of responses by Asian and white students to two of the questions: that pharmacists work under a lot of pressure and that pharmacists are well respected by the general public. The distribution of responses to the other two statements were significantly different (Chi, $p < 0.05$) - see Table 5.6.

Table 5.6: Differences in Responses of Asian and White Students about their family and friends perceptions of pharmacists.

Statement	Asian Students (n=156)	White Students (n=272)
Pharmacists spend all day dispensing prescriptions	80% (n=125)	70% (n=190)
Pharmacists work long hours	59% (n=92)	48% (n=129)

5.4.2 External Perceptions of the Status of Pharmacy

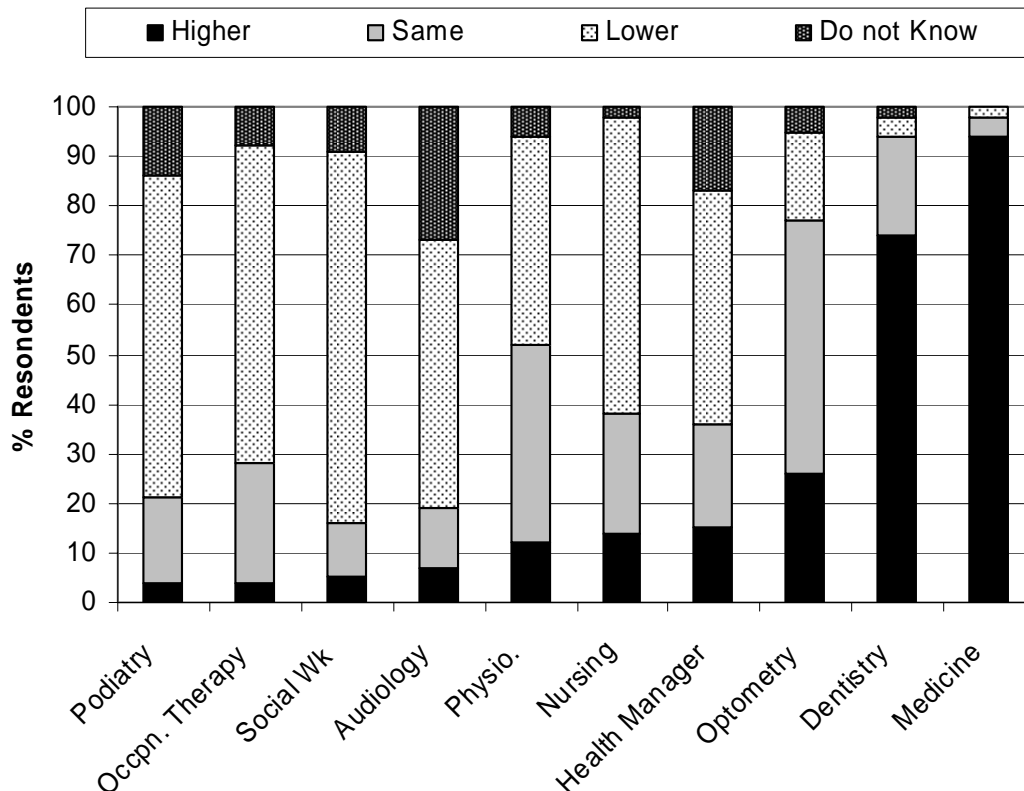
The final question in this section concerned the perceptions of final year students of pharmacy's status as a profession in the eyes of the general public. The students were asked to rate 10 other professions in relation to pharmacy - in each case on a four-point scale of higher, the same, lower and do not know. Figure 5.10 summarises the responses.

There was overwhelming agreement that medicine has a higher status than pharmacy (95%, $n=468$) and very strong agreement that dentistry has higher status (74%, $n=367$). At the other end of the scale, more than 60% of respondents considered that podiatry, occupational therapy, social work and nursing had lower status than pharmacy. Optometry was revealed as the occupation perceived as most similar in status to pharmacy - 51% ($n=252$) considered that this had equal status and fairly similar proportions that it has less (18%, $n=87$) or more (26%, $n=129$) status. There were marked variations in the proportion of respondents who

selected the “do not know” option: from zero in the case of medicine to 14% in the case of podiatry and 26% in the case of audiology.

The responses to these questions on status were not associated with either ethnicity (Asian compared with white) or gender.

Figure 5.10: The views of final year undergraduate pharmacy students on the relative status of a number of other related occupations compared with pharmacy.



5.4.3 Summary of Key Findings.

- Final year students were asked how their family and friends thought about pharmacy. These measures of external perceptions really give us an idea of how students see themselves in the health and social care hierarchy.
- The very strong perception that pharmacy offered guaranteed employment and was well paid confirmed the findings on motivating factors for pharmacy. This has implications now that pharmacy undergraduate numbers are rising at an unprecedented rate since guaranteed employment appears as a key characteristic in the image of pharmacy.
- The strong perception that pharmacy is mainly about dispensing prescriptions and that it is hard work is likely to arise from experience of community pharmacy since there are fewer opportunities for work experience in any other sector. It is likely that these generally negative perceptions are currently balanced by the perceived employment opportunities but may become more significant if employment became more difficult.

- Just under a third of respondents perceived that pharmacy has few opportunities for promotion and career development. This is an issue that the profession itself needs to address. There are several studies of consumers which suggest that the public has little real knowledge of the career opportunities in pharmacy.
- There was an almost universal perception that pharmacy is inferior in status to medicine (and dentistry) and a clear majority perceived that it was a secondary profession to medicine. These findings are consistent with the considerable number of students who enter pharmacy as a second choice to medicine and suggest that pharmacy is still not firmly established as a front line health profession.
- When asked about their own perceptions of the status of pharmacy relative to other health professions, 95% considered that pharmacy had lower status than medicine or dentistry and it was ranked as most similar to optometry.
- Asian students were generally less positive in their perceptions of pharmacy than white students. This is of great significance given the very high proportion of the applicant pool made up of Asian students. We noted earlier that pharmacy recruits applicants from a diverse social class background. It may be that Asian communities and families are less familiar with the professional environment and only know what they can see in community pharmacy compared to medicine. Further work is necessary to address the issue of Asian motivations and perceptions of pharmacy.

5.5 Future Career Ambitions

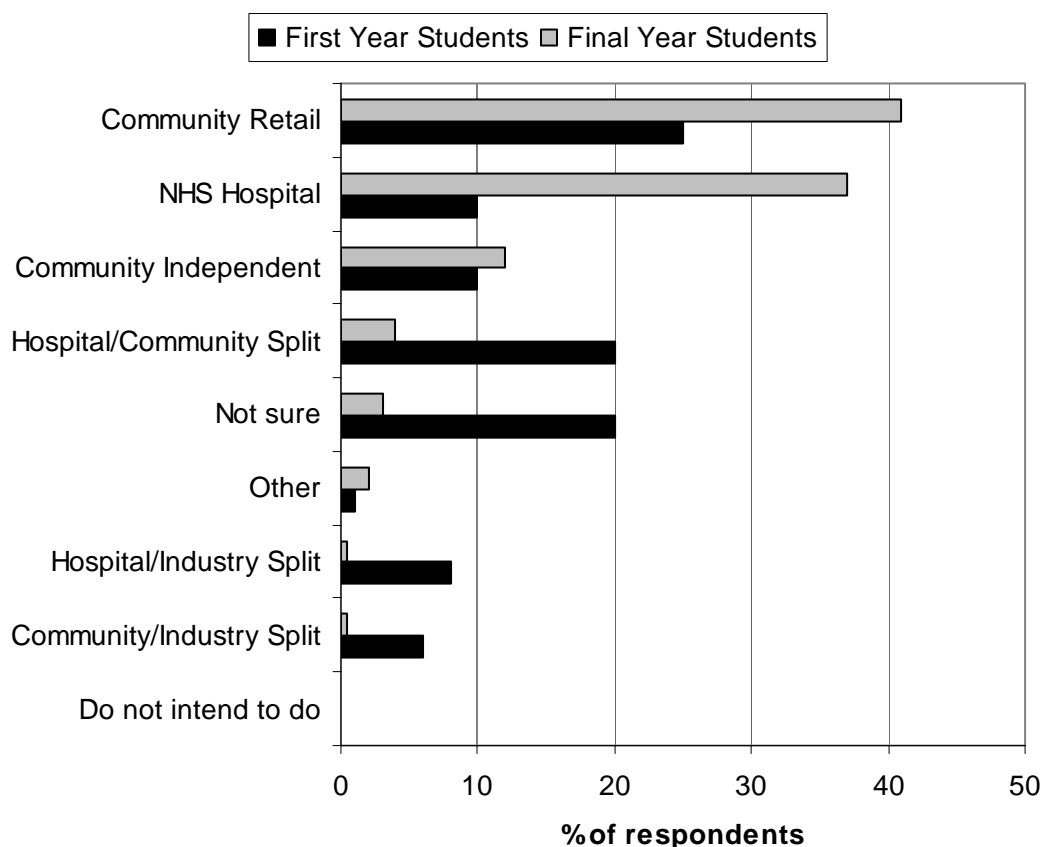
This section is based predominantly on a hypothetical future career. Until students are registered and employed in pharmacy they will have little real knowledge of the reality of career options. The career ladder itself is continually changing. Clinical pharmacy and work in the Primary Care sector are relatively recent developments of the past ten years. We tried to ascertain what students currently want from life.

5.5.1 Career Intentions - Preregistration Training

Students were provided with a list of options and asked to select one that reflected their intentions for preregistration training. The results are shown in Figure 5.11.

There was a significant association of response with gender ($p < 0.001$, Chi). The differences were in community pharmacy and hospital pharmacy. More males selected a preregistration in community (38%, $n=126$) than females (30%, $n=234$) and more females selected a preregistration in hospital (24%, $n=189$) and hospital community split (16%, $n=122$) than males (17%, $n=57$ and 9%, $n=29$ respectively).

Figure 5.11: Preferred Field of Pharmacy Practice for Preregistration Employment of Final Year and First Year Pharmacy Undergraduates.



The distribution of responses from Asian as compared with white respondents was also significantly different (Chi, $p < 0.001$) (see Table 5.7 below).

Table 5.7: Preferred Field of Practice for Preregistration Training of Asian and White Respondents (combined first and final year samples).

Practice Area	White Respondents (n=545)	Asian Respondents (n=350)
Community Retail Multiple	24.2% (n=132)	47.2% (n=171)
Community Retail Independent	14% (n=74)	8% (n=28)
NHS Hospital	29% (n=157)	13% (n=47)
Hospital Community Split Post	15% (n=80)	11% (n=41)
Hospital Industry Split Post	3% (n=17)	3% (n=11)
Community Industry Split Post	2% (n=8)	4% (n=14)
Not yet sure	11% (n=60)	14% (n=49)
Do not want to complete	0%	0%
Other	3% (n=16)	0%

5.5.2 Career Intentions - First Post after Preregistration

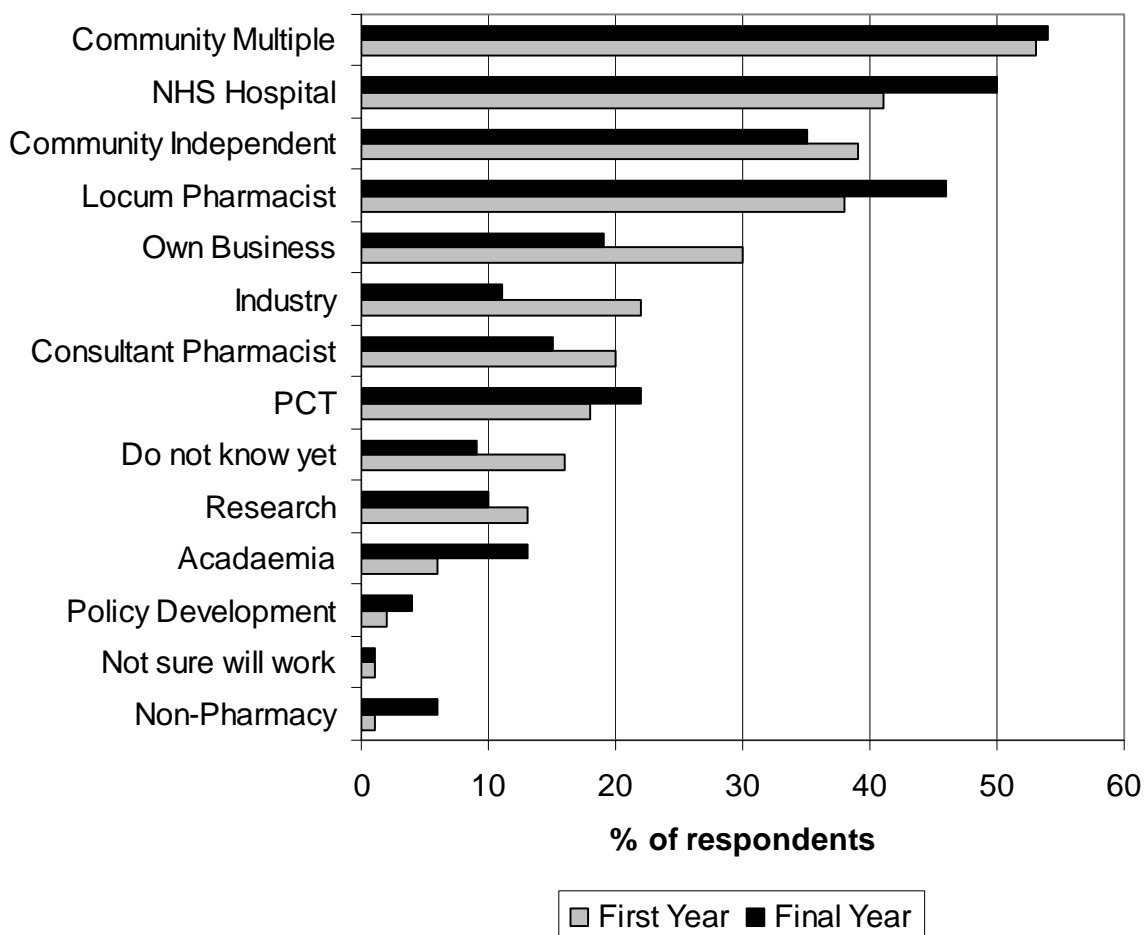
Respondents were given a list of possible employment fields and could tick any that might apply to them. Therefore the total responses will be more than 100%. Figure 5.12 shows the responses for the first and final year students. The same four options were the most popular for both first and final year students although with some changes to the order: multiple/chain

community pharmacy, independent community pharmacy, NHS hospital pharmacy and work as a locum pharmacist. In the case of first year students the fifth option was “own my own pharmacy business” (30%, n=197) and in the case of the final year students it was NHS primary care trust (22%, n=114).

Between a third and a half of students indicated that they would consider locum pharmacy as their career destination: first year 38% (n=248) and final year 46% (n=236). Although the proportion that would consider academic pharmacy doubled between first and final year, the absolute proportions were small (first year 6%, n=61 and final year 13%, n=67). The proportions indicating that they would consider work outside pharmacy were small for both cohorts: first year 1% (n=9) and final year 6% (n=32). There was a significant association between year of study and responses to the following options: hospital pharmacy, industry, academia and own pharmacy business.

There was a significant association between gender and response for only two of the options (p<0.001). The differences in both cases were that more females than males were interested in hospital pharmacy (49%, n=398 compared with 34%, n=119) and an NHS Primary Care Trust (23%, n=183 compared with 14%, n=47).

Figure 5.12: Intentions of First and Final Year Pharmacy Undergraduate Students in relation to first employment immediately following Preregistration Training. Results are shown as the percentage of each year that would look for work in the named areas.



There were some significant differences in the responses from Asian and white respondents (Chi, p at least <0.01). A larger proportion of Asian respondents (61%, n=226) than whiter

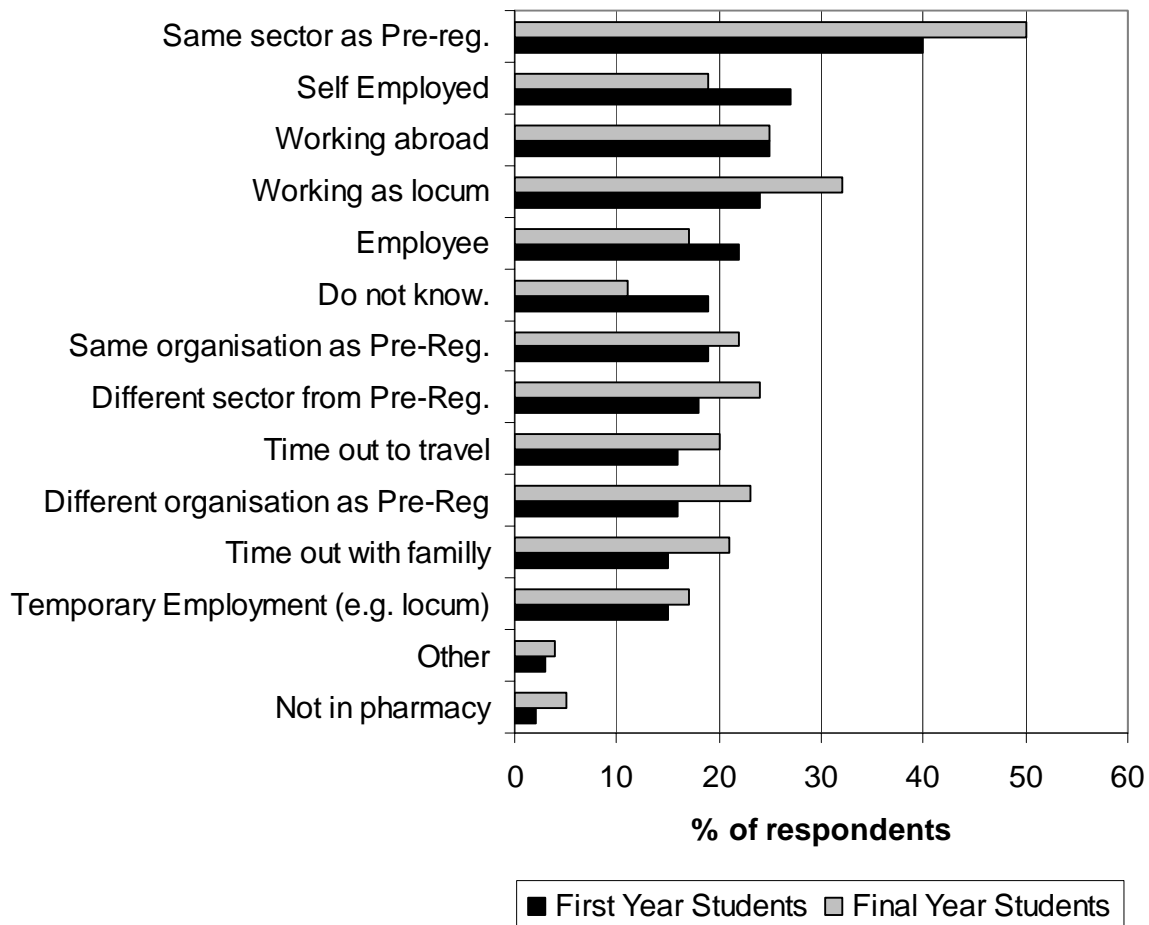
respondents (51%, n=283) indicated that they would look for a post in community pharmacy working for a multiple company. Conversely, more white respondents indicated an interest in independent community pharmacy (43%, n=242 compared with 34%, n=126) and in hospital pharmacy (50%, n=281 compared with 35%, n=131). The distribution of responses to the other options was not significantly different for white compared with Asian respondents.

5.5.3 Career Intentions - Five Years after Qualifying

Respondents were given a range of options relating to where they might expect to be working 5 years after qualification and asked to indicate any that might apply to them. The results are shown in Figure 5.13.

The same four options were most popular with both first and final year students: same sector as the preregistration year, self-employed, working abroad and working as a locum. There were significant differences between the responses of first and final years to four options. More final years selected working in a different sector compared with preregistration (23%, n=116 compared with 16%, n=104), as a locum (32%, n=160 compared with 24%, n=160) and not working in pharmacy (5%, n=27 compared with 2%, n=12). More first years selected self-employed (27%, n=177 compared with 19%, n=98). Overall, small numbers expected to be working outside pharmacy but between a quarter and a third of the sample expected to be working as a locum.

Figure 5.13: Views of first and final year students upon the field of practice in which they would expect to be working five years after qualifying as a pharmacist.



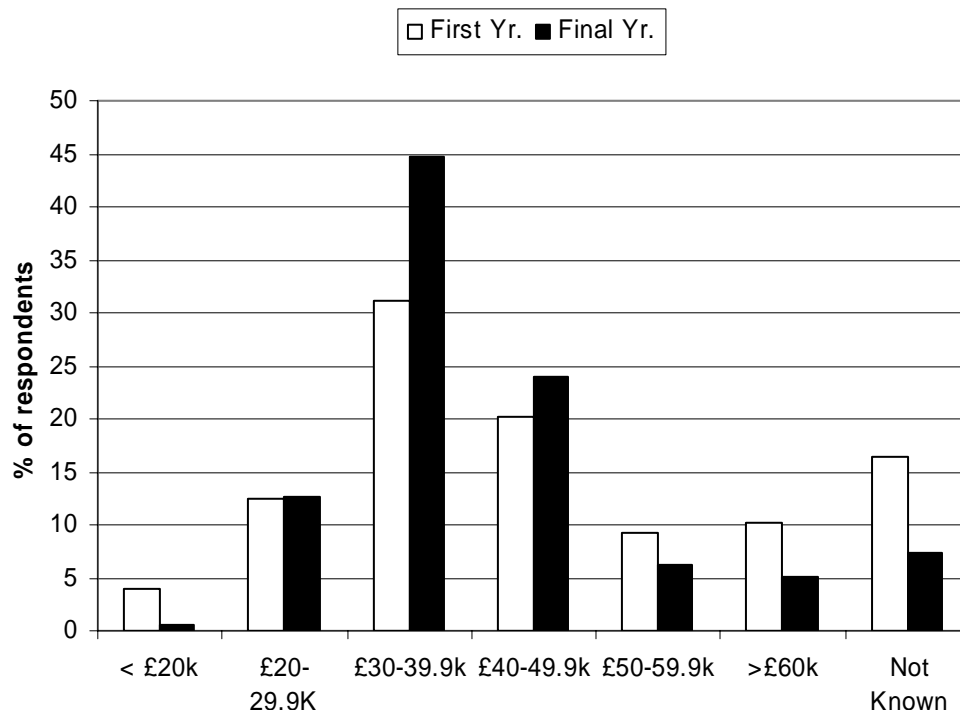
There was a significant association between gender and response for three of the options (Chi, p at least <0.01). More males responded that they would be working as self-employed (31%, n=106 compare with 20%, n=165). More females selected the response that they would be employed on a temporary or locum basis (18%, n=141 compared with 11%, n=38) and more the response that they would be taking out time for a family (21%, n=171 compared with 10%, n=33). There was no significant difference between responses of males and females to the option working as a locum; selected by 23% (n=81) of males and 29% (n=235) of females. Although there is a potential overlap between the options “working as a locum” and “temporary employment e.g. locum” but it appears that students differentiated between the two because the responses were different.

Responses of students of white and Asian origin were generally similar but there were significant differences in relation to four of the options (Chi, p at least <0.01). The proportion of Asian students (39%, n=145) expected to be working in the same sector of pharmacy as their preregistration year was less than for white students (49%, n=273). A larger proportion of Asian students (29%, n=109) expected to be self-employed than white students (17%, n=94) and conversely a smaller proportion (16%, n=59) expected to be an employee in an organisation than white students (21%, n=119). Finally a larger proportion of Asian students expected to be working as a locum (37%, n=137) than white students (24%, n=133).

5.5.4 Salary Expectations

Students were asked what salary they expected to earn five years after qualifying as a pharmacist. There was a significant association (Chi, p<0.01) between year of programme and responses to this question (see Figure 5.14).

Figure 5.14: Salary expectations of first year and final year pharmacy undergraduates for a point 5 years after qualification as a pharmacist.



The largest response group in both years was for the range £30 to £39.9k. A greater proportion of first years than final years placed the salary above this range (56%, n=366 compared with 42%, n=216).

There was no significant association with gender and responses to this question. There was a significant (Chi, $p < 0.001$) difference in the distribution of responses from students of Asian compared with white ethnicity. Overall, the salary expectations of Asian students were higher than for white students. Just under a half (46%, $n=168$) of Asian students expected a salary five years after graduation that was greater than £40k per year compared with about a quarter of the white students (26%, $n=161$).

5.5.5 Summary of key findings

- One fifth of first year students had not decided which career path to take. This provides a significant opportunity for staff within schools.
- **Preregistration Destination.** Multiple community pharmacy was the most frequently named preregistration destination for both first (25%) and final year (41%) students. A greater proportion of final year students named retail community and hospital and a greater proportion of first years a split preregistration. Only 5% of final year students compared with 20% of first year students were not sure of their preregistration destination. More females interested in hospital posts and more males than females in community posts. More Asian students than white students were interested in community careers and less in hospital.
- This study did not cover perceptions of the quality of preregistration training or perceptions of the success to be achieved in the preregistration examinations. These are issues to explore in future studies since it is likely to be a strong influencing factor upon choice.
- **First Post after Preregistration.** Multiple community pharmacy, NHS hospital pharmacy, community independent pharmacy and locum pharmacy were the most popular career areas for both first and final year students for the first post after preregistration training. Final years were more interested than first years in hospital pharmacy and locum pharmacy with first years more interested in owning a business and industry. Significantly more females than males would consider posts in an NHS hospital and in an NHS Primary Care Trust. Significantly more Asians than white students would consider a post in multiple community pharmacy and significantly more white students would consider a post in hospital pharmacy. Between a third (first year) and a half of students (final year) would consider locum employment.
- **Five Years after Qualification.** 40% or more of first and final year students expected to be working in the same sector as their preregistration experience five years after qualifying as a pharmacist. Over 20% expected to be working as self-employed, abroad, as a locum or as an employee. A small proportion of students (less than 5%) expected to be working outside pharmacy. Significantly more females than males expected to be taking time out with their family or to be working as on a temporary basis while significantly less expected to be self-employed. Significantly more Asian students than white students expected to self-employed or to be working as a locum and significantly less expected to be working in the same sector as their preregistration or to be an employee. Between a quarter and a third expected to be working as a locum.
- When asked about employment five years after graduation, around a fifth of respondents were considering time out for a family, time out for travel and locum work. This suggests that many students have moved away from the traditional view of a career for life and intend to use their pharmacy qualification to enable freedom of lifestyle. This has implications for future workforce planning.

- The findings show differences in career expectations between males and females and between Asian and white students. Asians show a preference for the commercial sector and have higher income expectations.

5.6 Work Life Balance

Many young people have rejected the traditional career path of managing a community pharmacy for life. A UK pharmacy qualification is a passport to travel, independence and a better work life balance than many older pharmacists will have experienced. In this section we explored what kind of working life students envisaged during the first five years after qualifying.

5.6.1 Plans for Future Working Life

Students were asked three questions relating to work life balance. The first was about their plans for their future working life and this provided seven alternatives plus do not know (no intention yet) and other. Students were asked to select one option (see Figure 5.15).

The most common choice for both first and final years was ‘to work full time and then part time if I have a family’ followed by ‘work in a full time career until typical retirement age’. However, there were marked gender differences in the responses to these questions. For both questions the difference in response between males and females was highly significant in both years (Chi, $p < 0.001$). Thus the largest proportion of male students in both years selected the option full time career until typical retirement age. By comparison the majority of female students in both years selected the option work full time then part time if I have a family (see Table 5.8 below).

Figure 5.15: Plans of first and final year pharmacy undergraduates for their future working life.

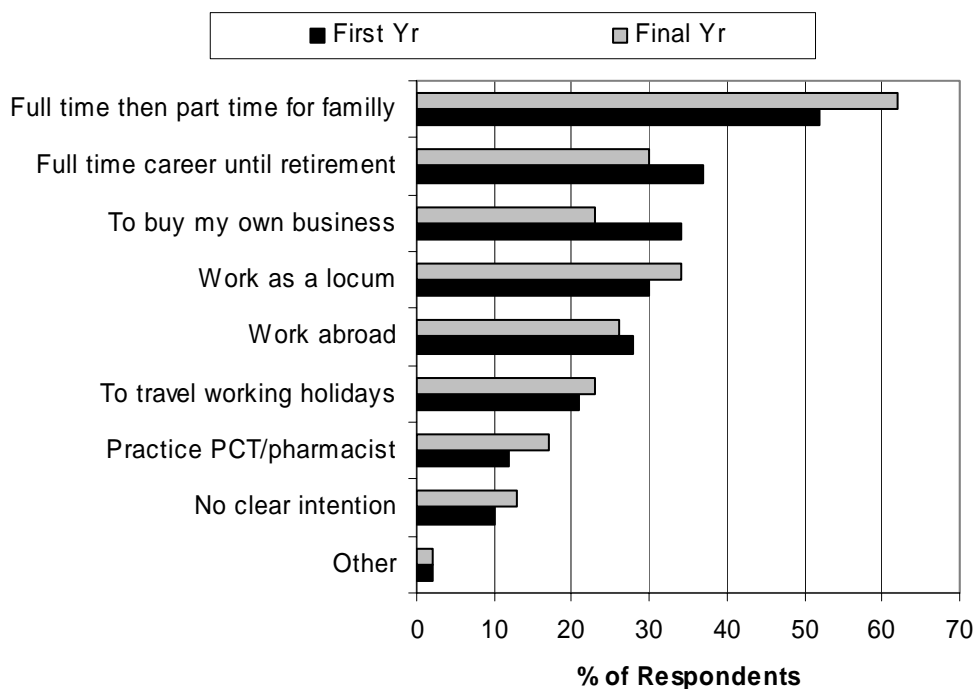


Table 5.8: Percentage of Male and Female Students in the First and Final Years who agreed with two statements on full time future working pattern.

Option	Male Students	Female Students
Full time career until typical retirement age	First Year: 54%, n=112 Final Year: 55%, n=76	First Year: 29%, n=127 Final Year: 21%, n=75
Work full time then part time if I have a family	First Year: 22%, n=46 Final Year: 17%, n=24	First year: 66%, n=292 Final Year: 80%, n=288

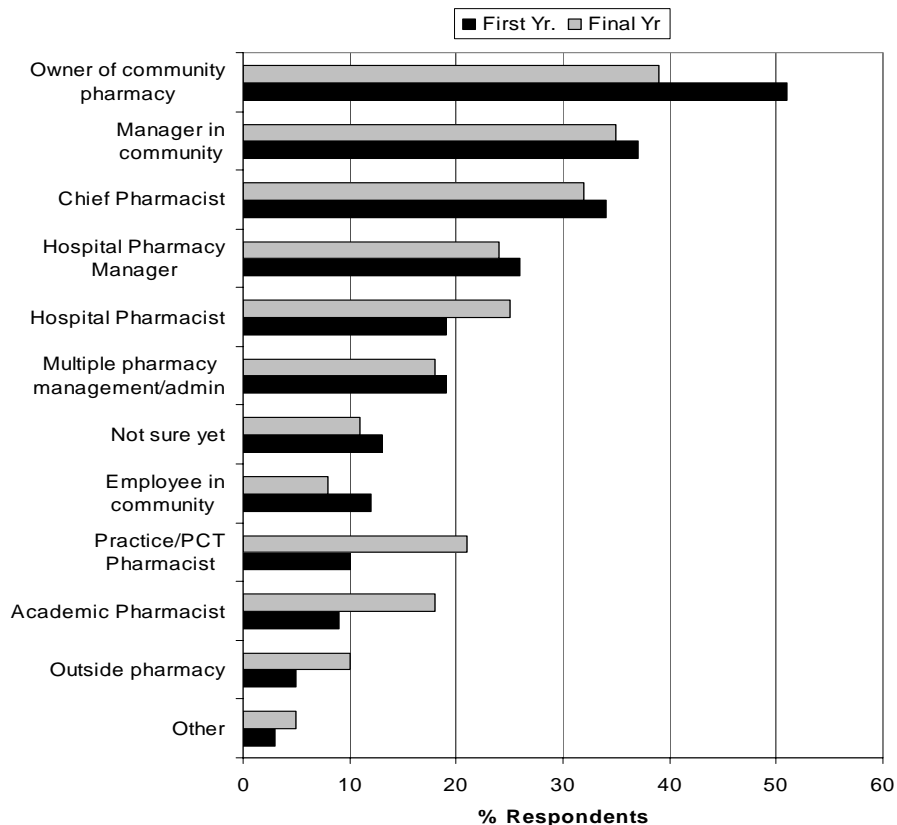
Only one other option showed a significant difference between males and females, and then only for final year students. Just over a third of final year males (35%, n=48) responded positively to the statement “Intend to buy my own business” whereas this option was selected by only 18% (n=66) of female final year students (Chi, p<0.001).

Responses of white and Asian students were generally similar with two exceptions. A higher proportion of Asian respondents (38%, n=143) stated that they intended to work as a locum than did white respondents (30%, n=165). In addition, a higher proportion of Asian respondents (32%, n=117) stated that they intended to own their own business than did white respondents (22%, n=120). Over half (54%, n=45) of the much smaller cohort (n=84) of black or black British students also stated that they intended to buy their own business. The responses from this sub-group to the other options were similar to those of the white sub-group. These differences between subgroup responses were significant (Chi, p<0.01).

5.6.2 Career Ambition - Highest Career Level

The second question on work life balance was about the highest level that students would like to achieve in their pharmacy career. Each respondent was asked to indicate their three top ambitions and the results are shown in Figure 5.16 below.

Figure 5.16: Highest career level ambitions of first and final year pharmacy undergraduates.



There was an association of response and gender for four of the options (Chi, $p < 0.01$). More female students selected hospital pharmacist, hospital pharmacy manager and practice/PCT pharmacist than males. More males selected owner of a community pharmacy. These differences are exemplified in Table 5.9.

Table 5.9: Highest career ambitions where there was a difference in response between male and female students.

Career Position	Male Students	Female Students
Owner of a community pharmacy	54% n=186	43% n=348
Practice/PCT Pharmacist	8% n=319	17% n=140
Hospital Pharmacist	14% n=48	25% n=201
Hospital Pharmacy manager	19% n=66	28% n=223

There were a number of differences between the responses of Asian and white students to this question. There was no significant difference in responses in relation to manager in a community pharmacy, chief pharmacist, a position outside pharmacy and not yet sure. A higher proportion of Asian than of white students selected employee in a community pharmacy, owner of a community pharmacy, and management or administration in a multiple pharmacy. Conversely, a lower proportion of Asian than of white students selected practice or PCT pharmacy, hospital pharmacy, hospital pharmacy manager and academic pharmacist (see Table 5.10 below), (Chi, at least $p < 0.05$).

Table 5.10: The Highest Career level ambitions where responses of Asian and white students differed (First and Final Years Combined).

Highest Career Level to be Achieved	Asian students (n=373)	White Students (n=558)
Employee in Community Pharmacy	14% (n=50)	9% (n=50)
Owner of Community Pharmacy	49% (n=182)	41% (n=230)
Multiple Pharmacy Manager Administrator	23% (n=85)	14% (n=81)
Practice or PCT Pharmacy	12% (n=45)	18% (n=102)
Hospital Pharmacist	18% (n=68)	24% (n=135)
Hospital Pharmacy Manager	17% (n=63)	29% (n=160)
Academic Pharmacist	10% (n=39)	16% (n=88)

5.6.3 Planned Hours of Work

The third of the questions on work life balance was the number of hours per week that students wanted to work when qualified.

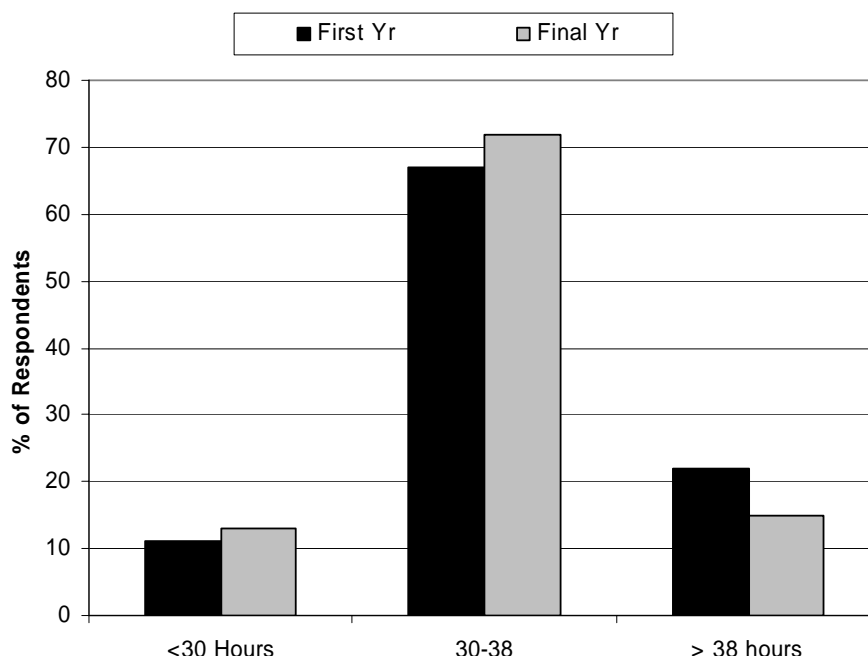
There was no significant difference between the responses of first year and final year students and most wanted to work 30-38 hours per week (see Figure 5.17). The responses to this question were significantly different between males and females in each year (Chi, $p < 0.01$). In both years, a similar proportion of males and females opted for less than 30 hours but a larger proportion of males opted for more than 38 hours per week. Table 5.11 shows the responses by year broken down by gender.

Table 5.11: Number of hours per week that first and final year pharmacy undergraduates want to work when qualified shown by gender.

Hours of work	Male Students	Female Students
<30 hours per week	First Year: 12%, n=24 Final Year: 10%, n=14	First Year: 10%, n=44 Final Year: 14%, n=49
30-38 hours per week	First Year: 59%, n=121 Final Year: 61%, n=84	First Year: 71%, n=314 Final Year: 77%, n=279
> 38 hours per week	First Year: 30%, n=62 Final Year: 29%, n=39	First Year: 19%, n=83 Final Year: 9%, n=34

The distribution of responses for all Asian students was significantly different than for all white students (Chi, $P < 0.01$) and more Asian students (17%, n=64) indicated that they would want to work less than 30 hours a week (white students 7%, n=40).

Figure 5.17: Number of hours per week that first and final year pharmacy undergraduates want to work when qualified.



5.6.4 Summary of key findings

- It is in exploring work life balance that the differences between male and female students are at their most noticeable. The most obvious difference was in the proportion of students intending to take a career break for family reasons (three to four times as many females as males) and intention to work full time until retirement age (twice as many males as females).
- The option of working full time until retirement is no longer the accepted pattern for future work - it was anticipated by only about half of the males and a quarter of the females.
- One third of all respondents intend to work as a locum - which was consistent with students' plans for their immediate employment post registration (see page 43) and five years after registration (see page 45). This is also similar to existing workforce

patterns identified by the pharmacy census.^{3,4} More males than females want to be self employed.

- When asked to select their three top ambitions, the first four were the same for first and final year students: owner of a community pharmacy, manager of a community pharmacy, chief pharmacist and hospital pharmacy manager. The option employee in community pharmacy was selected by only 12% of final year students and 8% of first year students: of similar order the proportions selecting work in a primary care trust or outside pharmacy. More female students selected hospital pharmacist, hospital pharmacy manager and practice/PCT pharmacist and more males' owner of a community pharmacy. More Asian students than white students selected community pharmacy roles and significantly less work in a PCT pharmacy, hospital pharmacy manager or hospital pharmacy and academic pharmacy.
- Ownership of a community pharmacy was the most commonly selected "top career ambition". This is despite the restrictions in NHS pharmacy contracts that have been in force since the mid 1980s and it represents a serious mismatch in personal ambition and reality that could create future workforce dissatisfaction. There is a need for further study to understand why this is perceived as attractive in the pharmacy context.
- Asian ambitions were more focused on self employment than for white students although both white and Asian males were more focussed on this outcome than females. This is consistent with earlier studies on ethnic minority employment patterns, where Asian males are more likely to set up in business. This is an area that needs further research.
- Although the pattern of full time work to retirement is no longer a majority aim, most students did expect to work in full time mode when qualified. Male students anticipated a longer working week than female students.

5.7 Influence of Undergraduate Experience upon Career Choice

We know that students' attitudes change over time. Within university education, potential influences are from staff, from the experience gained on the programme and from the students' experiences in placement and vocational work. The questions in this section were included only in the final year questionnaire.

5.7.1 Changes in Career Choice during the Degree

The majority of final year students, 67.3% (n=340) had a definite idea of which sector they wanted to work in after preregistration training when they started their course (Table 5.12).

Table 5.12: The definite career plans for work after preregistration training of Final Year Students at the start of their MPharm degree

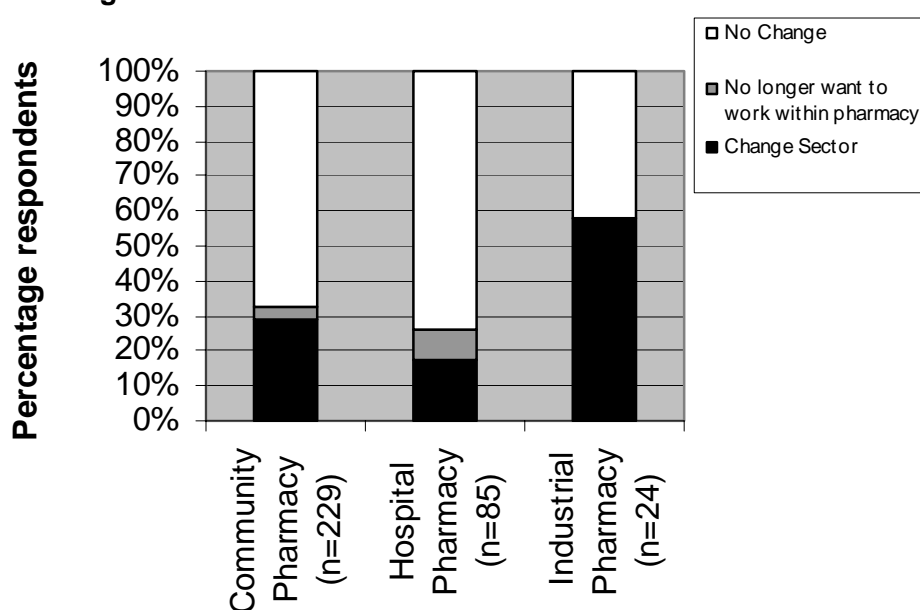
Professional Area	Percentage (n=505)
Community Pharmacy	45.3% (n=229)
Hospital Pharmacy	16.8% (n=85)
Industrial Pharmacy	4.8% (n=24)
Other	0.4% (n=2)
No definite career plans	32.7% (n=165)

When asked whether their career plans had changed over the duration of their MPharm studies, about a third (32.4%, n=110) of the 340 students who had come in with definite career plans (see Table 5.12 above), considered that it had. For most, this was a change of sector (27.9%, n=95) rather than a desire not to work within pharmacy (4.4%, n=15).

The responses to the question on career change over the MPharm programme were significantly associated with the original career plan (see Figure 5.18 (Chi, p<0.01)).

Just over half the students who originally wanted to work within industrial pharmacy (58.3%, n=14) have decided during their course of study that they would now like to work within a different area of the profession. This compares to 28.8% (n=66) in the original community pharmacy pool and 17.6% (n=15) in the original hospital pharmacy pool.

Figure 5.18: Cross-tabulation between respondents' original career choice (community, hospital or industrial pharmacy) and whether this choice has changed during their undergraduate studies.



5.7.2 Influence of School of Pharmacy on Career Choice

Respondents were then asked to rate the influence of a number of factors that might impact upon students during their undergraduate degree (see Table 5.13 below).

Table 5.13: The perceived influence of a range of factors upon students' career choice during the MPharm degree.

Factor	Large influence	Small influence	No influence
Course content (n=499)	51.5%	39.5%	9.0%
Hospital pharmacy visit/teaching organised by the School of Pharmacy as part of the course (n=497)	49.7%	32.4%	17.9%
Pharmacy Practice lecturers (n=500)	41.8%	44.8%	13.4%
Teacher Practitioners (n=497)	34.0%	44.9%	21.1%
Community pharmacy visit/teaching organised by the School of Pharmacy as part of the course (n=486)	29.4%	36.6%	34.0%
Other lecturers on the MPharm course (n=492)	21.7%	53.7%	24.6%
Experience of your final year project (n=498)	18.9%	26.3%	54.8%
Fellow students career choices (n=496)	11.9%	32.3%	55.8%
Other (n=67)	64.2%	10.4%	25.4%

The biggest university influence on career choice was the content of the course (rated a very large influence by 51.5%, n=257), followed by hospital visits organised by the School of Pharmacy as part of the course (49.7%, n=247). Pharmacy practice lecturers were rated as having a higher influence of students' career choices (41.8%, n=209) than teacher practitioners (34.0%, n=169), although this could be due to differences in the perception by the students of the differing roles of staff members within Schools of Pharmacy.

For a number of factors the distribution of responses was significantly different for Asian respondents compared with white respondents. Asian respondents were more likely to be influenced by their experience of a community pharmacy visit organised by the school, by the career choices of fellow students and by their final year project:

- **Community pharmacy visit/teaching organised by the School of Pharmacy as part of the course** (Asian subgroup, large influence 42.0%; white subgroup, large influence 23.7%; 18.3% difference) (Chi, p<0.001);
- **Fellow students career choices** (Asian subgroup, large influence 19.7%; white subgroup, large influence 6.6%; 13.1% difference) (Chi, p<0.001); and
- **Experience of their final year project** (Asian subgroup, large influence 24.2%; white subgroup, large influence 15.0%; 9.2% difference) (Chi, p<0.01).

There was a significant association of response with gender of the respondent for only one option. Female respondents were more influenced by hospital pharmacy visits/teaching organised by the School of Pharmacy as part of the course than male respondents (female large influence 53.7%, male large influence 40.3%, 13.4% difference) (Chi, p<0.05).

There was a significant association of the ratings for the influence of 'Hospital pharmacy visit/teaching organised by the School of Pharmacy as part of the course' and the students preregistration sector (Table 5.14) (Chi, p<0.001).

Table 5.14: Students' preregistration choice compared to the influence of hospital pharmacy visit/teaching organised by the School of Pharmacy as part of the course.

Preregistration choice	Influence of hospital pharmacy visit/teaching organised by the School of Pharmacy as part of the course		
	Large influence	Small influence	No influence
Hospital pharmacy (n=182)	67.6%	22.5%	9.9%
Community retail - chain/multiple (n=201)	40.3%	36.8%	22.9%
Community retail – independent (n=60)	35.0%	45.0%	20.0%

5.7.3 Influence of Students' Experience of Pharmacy on Career Choice

Students were asked to rate the influence upon their career choice of a number of pharmacy related factors applicable during their time as undergraduates (see Table 5.15).

Table 5.15: The perceived influence of pharmacy related factors upon career choice.

Factor	Large influence	Small influence	No influence
Weekend or vacation experience in community pharmacy (n=495)	67.5%	20.2%	12.3%
Talking generally to other practicing pharmacists (n=497)	52.1%	36.8%	11.1%
Weekend or vacation experience in hospital pharmacy (n=502)	49.6%	17.5%	32.9%
Attendance at a preregistration recruitment fair (n=491)	17.1%	33.0%	49.9%
Debt from your time at university (n=489)	12.7%	23.5%	63.8%
Company recruitment material (n=491)	12.0%	34.0%	54.0%
Other (n=36)	30.6%	11.1%	58.3%

Weekend or vacation experience in community pharmacy was seen by students as having the largest influence on their career choice (67.5% considered this a large influence, n=334), followed by talking generally to other practicing pharmacists (52.1%, n=259) and weekend or vacation experience in hospital pharmacy (49.6%, n=249). Attendance at a preregistration recruitment fair, debt from your time at university and company recruitment material were all seen as having a low influence.

The distribution of responses for some factors was significantly different for Asian respondents compared with white respondents. The following were all stated as having a greater influence within the Asian subgroup than the white subgroup.

- **Attendance at a preregistration recruitment fair** (Asian subgroup, large influence 29.6%; white subgroup, large influence 10.0%; 19.6% difference) (Chi, $p < 0.001$).
- **Debt from your time at university** (Asian subgroup, large influence 19.3%; white subgroup, large influence 8.9%; 10.4% difference) (Chi, $p < 0.01$).
- **Company recruitment material** (Asian subgroup, large influence 17.9%; white subgroup, large influence 8.5%; 9.4% difference) (Chi, $P < 0.001$).

The distribution of responses for two factors was significantly different for female respondents compared with male respondents:

- **Weekend or vacation experience in hospital pharmacy** (female, large influence 54.2%; male, large influence 38.5%, 15.7% difference) (Chi, $p < 0.01$).
- **Attendance at a preregistration recruitment fair** (female, large influence 19.5%; male, large influence 11.5%; 8.0% difference) (Chi, $p < 0.025$).

5.7.4 Influences of the Profession of Pharmacy on Career Choice

Students were asked to rate the influence of a range of factors from within the profession of pharmacy upon their future career choice (Table 5.16). These factors were of two types, activities linked to the RPSGB (e.g. BPSA and local branch meetings) or information about pharmacy as a profession, mainly in the form of various formats of material within the Pharmaceutical Journal.

None of these factors emerged as major influences upon career choice - in all cases less than one quarter of respondents considered them to have a large influence and in most cases a majority considered them to have no influence (see Table 5.16).

Although respondents from both major ethnic subgroups gave low ratings, there were differences in the distribution of responses between the two subgroups for nearly all listed factors. With the exception of “Jobs and Recruitment Section of the Pharmaceutical Journal”, the Asian subgroup rating the factors as having a higher influence than the white subgroup.

- **The new Community Pharmacy Contract** (Asian subgroup, large influence 35.7%; white subgroup, large influence 15.0%; 20.7% difference) (Chi, $p < 0.001$).
- **Pharmacy news in the Pharmaceutical Journal** (Asian subgroup, large influence 33.1%; white subgroup, large influence 15.3%; 17.8% difference) (Chi, $p < 0.001$).
- **Preregistration presentation by the RPSGB** (Asian subgroup, large influence 25.5%; white subgroup, large influence 8.5%; 17.0% difference) (Chi, $p < 0.001$).
- **Pharmacy news in other journals** (Asian subgroup, large influence 23.7%; white subgroup, large influence 7.3%; 16.4% difference) (Chi, $p < 0.001$).
- **BPSA activity** (Asian subgroup, large influence 12.7%; white subgroup, large influence 3.3%; 9.4% difference) (Chi, $p < 0.001$).
- **Research articles in the Pharmaceutical Journal** (Asian subgroup, large influence 17.3%; white subgroup, large influence 8.8%; 8.5% difference) (Chi, $p < 0.01$).
- **Letters pages of the Pharmaceutical Journal** (Asian subgroup, large influence 12.8%; white subgroup, large influence 5.5%; 7.3% difference) (Chi, $p < 0.001$).
- **Attendance at RPSGB local branch meeting** (Asian subgroup, large influence 8.4%; white subgroup, large influence 2.6%; 5.8% difference) (Chi, $p < 0.001$).

Table 5.16: The influence that a number of professional pharmacy factors have had on students’ career choice.

Factor	Large influence	Small influence	No influence
Pharmacy news in the Pharmaceutical Journal (n=503)	21.7%	38.4%	40.0%
The new Community Pharmacy Contract (n=501)	21.6%	39.9%	38.5%
Jobs and recruitment section of the Pharmaceutical Journal (n=502)	17.1%	37.6%	45.2%
Preregistration presentation by the RPSGB (n=497)	14.5%	33.2%	52.3%
Pharmacy news in other journals (n=501)	13.6%	34.5%	51.9%
Research articles in the Pharmaceutical Journal (n=500)	12.6%	36.2%	51.2%
Letters page of the Pharmaceutical Journal (n=499)	8.8%	35.9%	55.3%
BPSA activity (n=498)	6.8%	23.3%	69.9%
Attendance at RPSGB local branch meeting (n=494)	4.5%	24.3%	71.3%
Other (n=46)	19.6%	6.5%	73.9%

Only in the case of the “jobs and recruitment section of the Pharmaceutical Journal” was there a significant difference between responses of male and female students. In this case male respondents were more influenced than female respondents (male large influence 21.5%, female large influence 15.6%, difference, 5.9%) (Chi, $p < 0.01$).

5.7.5 Perception of Working as a Pharmacist in Community

These statements were adapted from recruitment study, to gauge public perceptions of willingness to work in the NHS²⁴. Respondents were given a series of statements and asked whether they believed that each would apply to working as a community pharmacist or as a hospital pharmacist. Their responses are outlined in Table 5.17 below.

Table 5.17: Respondents' agreement with a number of statements about community pharmacy.

Perception	Yes	No	Don't know
Having direct contact with patients (n=496)	93.3%	5.4%	1.2%
Having a secure job (n=498)	90.0%	5.6%	4.4%
Working under pressure (n=499)	85.0%	10.6%	4.4%
Opportunities to be part of a healthcare team (n=498)	70.7%	24.1%	5.2%
Good job opportunities because of a shortage of pharmacists (n=497)	69.0%	18.9%	12.1%
Opportunities to move up a career ladder (n=498)	62.0%	30.7%	7.2%
Working long hours (e.g. over 40 hours per week) (n=500)	58.2%	32.8%	9.0%
Having the opportunity to use my specialist knowledge (n=500)	54.4%	35.6%	10.0%
Having a variety of work each day (n=498)	45.2%	50.4%	4.4%
Working somewhere that is understaffed (n=498)	44.8%	38.6%	16.7%
Opportunities to interact with other pharmacists on a daily basis (n=497)	43.7%	49.5%	6.8%

There was strong agreement with job security and contact with patients but also with working under pressure and to a somewhat lesser extent, working long hours. Less than half of respondents agreed that community pharmacy offered opportunities to “interact with other pharmacists” and have “a variety of work each day”.

In the case of three of the options, there was a significant association of the responses with ethnic background. In each case, Asian students were more in agreement than white student that the statement was applicable to community pharmacy.

- **Opportunities to interact with other pharmacists on a daily basis** (Asian respondents, yes 58.0%; white respondents, yes 37.5%; 20.5% difference) (Chi, $p < 0.001$).
- **Opportunities to be part of a healthcare team** (Asian respondents, yes 82.3%; white respondents, yes 64.3%; 18.0% difference) (Chi, $p < 0.001$).
- **Opportunities to use specialist knowledge** (Asian respondents, yes 63.1%; white respondents, yes 48.4%; 14.7% difference) (Chi, $p < 0.025$).

Responses of male and female students were generally similar although for two of the statements there was a significant association of response with gender with males less in agreement than females (working under pressure and having direct contact with patients).

5.7.6 Perception of Working as a Pharmacist in Hospital

Respondents were then asked whether they considered that the same specific statements applied to working as a hospital pharmacy. Their responses are outlined in Table 5.18 below.

Table 5.18: Respondents' agreement with a number of statements about hospital pharmacy.

Perception	Yes	No	Don't know
Having the opportunity to use my specialist knowledge (n=500)	94.8%	1.8%	3.4%
Opportunities to be part of a healthcare team (n=501)	94.6%	1.8%	3.6%
Opportunities to interact with other pharmacists on a daily basis (n=499)	93.2%	3.0%	3.8%
Having direct contact with patients (n=495)	90.1%	5.9%	4.0%
Having a variety of work each day (n=499)	89.8%	6.2%	4.0%
Opportunities to move up a career ladder (n=497)	85.3%	7.6%	7.0%
Having a secure job (n=498)	82.3%	6.6%	11.0%
Working under pressure (n=495)	79.0%	13.9%	7.1%
Good job opportunities because of a shortage of pharmacists (n=497)	63.0%	21.9%	15.1%
Working somewhere that is understaffed (n=497)	48.1%	34.3%	17.7%
Working long hours (e.g. over 40 hours per week) (n=498)	47.6%	41.2%	11.2%

The order of agreement was very different to that for community pharmacy and only two statements were agreed by less than half the respondents. In both cases these were negative statements - "working somewhere that is understaffed" and "working long hours". In this case, only one significant difference was found in the distribution of responses between the Asian and white subgroups. More Asian respondents replies 'yes' to the question about working long hours than white students (Asian respondents, yes 63.7%; white respondents, yes 41.9%; 21.8% difference) (Chi, $p < 0.001$).

Analysis by gender showed that for six of the statements, responses were significantly associated with gender of the respondent. In each of these cases a clear majority of respondents agreed but female responses were more polarised with a higher percentage in agreements:

- **Working under pressure** (female yes 82.2%, male yes 71.6%, 10.6% difference) (Chi, $p < 0.05$);
- **Opportunities to interact with other pharmacists on a daily basis** (female yes 96.1%, male yes 86.6%, 9.5% difference) (Chi, $p < 0.001$);
- **Having a secure job** (female yes 85.2%, male yes 76.1%, 9.1% difference) (Chi, $p < 0.025$);
- **Opportunities to be part of a healthcare team** (female yes 97.2%, male yes 88.2%, 9.0% difference) (Chi, $p < 0.001$);
- **Having the opportunity to use my specialist knowledge** (female yes 97.5%, male yes 88.8%, 8.7% difference) (Chi, $p < 0.001$); and
- **Having a variety of work each day** (female yes 92.4%, male yes 84.4%, 8.0% difference) (Chi, $p < 0.01$).

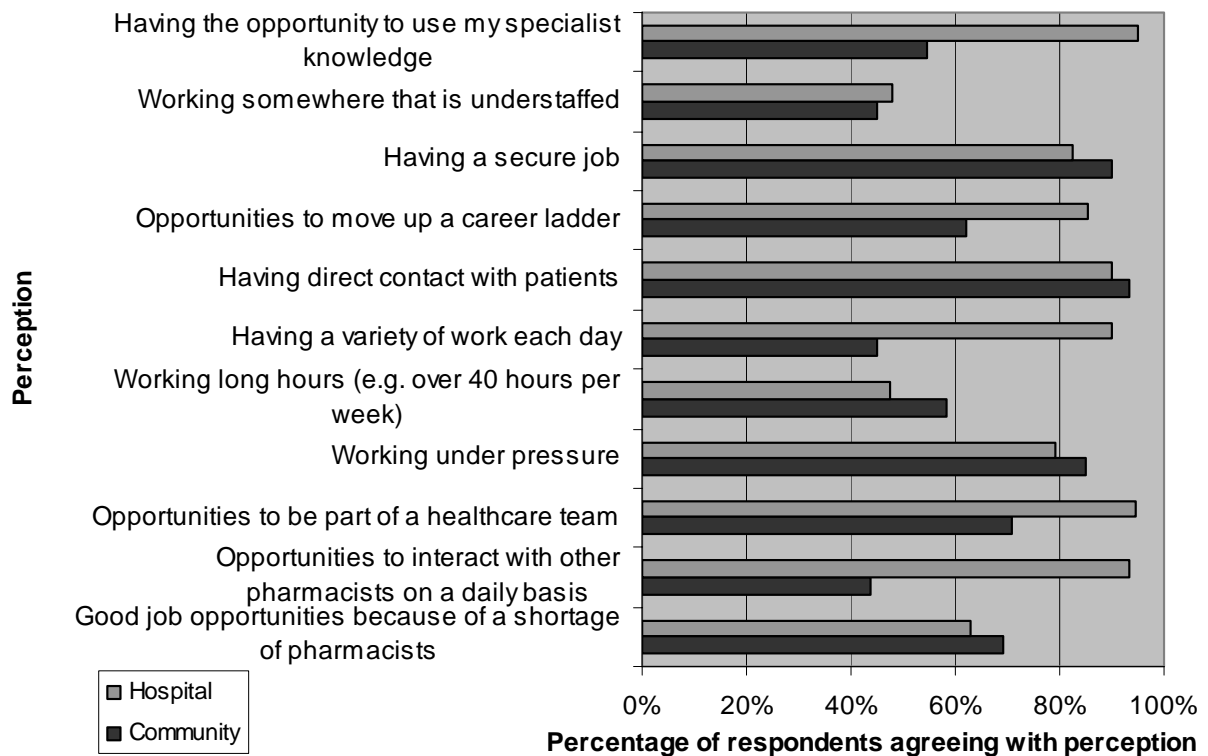
5.7.7 Views of Community and Hospital Compared.

Figure 5.19 provides the percentage of respondents that agreed each statement applied to community pharmacy and to hospital pharmacy.

There were four job characteristics where agreement differed by more than 20% between hospital and community:

- **Opportunities to interact with other pharmacists on a daily basis** (93.2% vs 43.7%; 49.5% difference) (Chi, $p < 0.001$);
- **A variety of work each day** (89.8% vs. 45.2%; 44.6% difference) (Chi, $p < 0.001$);
- **The opportunity to use specialist knowledge** (94.8% vs. 54.4%; 40.4% difference) (Chi, $p < 0.001$);
- **Opportunities to be part of a healthcare team** (94.6% vs. 70.7%; 23.9% difference) (Chi, $p < 0.001$); and
- **Offering more of an opportunity to move up a career ladder** (85.3% vs. 62.0%; 23.3% difference) (Chi, $p < 0.001$).

Figure 5.19: Respondents' agreement as to whether a series of descriptors apply to working in community compared with hospital pharmacy.



The overall picture that emerged was that students perceived community practice less favourably than hospital and considered it to be more isolated, less linked to the health team with less opportunities to use specialist knowledge and less variety of task.

5.7.8 Importance of career factors

Finally, respondents were asked to rate the same job characteristics on the basis of importance to themselves in making a decision in which sector of pharmacy to work (see Table 5.19).

Table 5.19: The importance of different job characteristics to final year students in relation to their intended sector of pharmacy work.

Factor (n=number of respondents)	Very important	Quite important	Not important
Having a secure job (n=495)	83.6%	15.4%	1.0%
Having direct contact with patients (n=494)	78.5%	17.2%	4.3%
Having the opportunity to use my specialist knowledge (n=495)	77.4%	19.8%	2.8%
Opportunities to be part of a healthcare team (n=493)	72.6%	22.5%	4.9%
Having a variety of work each day (n=496)	72.0%	25.4%	2.6%
Having opportunities to move up a career ladder (n=493)	70.6%	25.6%	3.9%
Opportunities to interact with other pharmacists on a daily basis (n=495)	52.1%	36.8%	11.1%
Good job opportunities because of a shortage of pharmacists (n=496)	40.7%	41.1%	18.1%
Not working somewhere that is understaffed (n=494)	38.3%	48.2%	13.6%
Not working long hours (e.g. over 40 hours per week) (n=496)	33.7%	48.2%	18.1%
Not working under pressure (n=495)	28.9%	46.7%	24.4%

Job security emerged as the most important factor followed by “direct contact with patients”. A clear majority of respondents agreed that both these factors were true of community and hospital practice. However, the next four factors (Table 5.19) had been perceived by respondents as major differences between hospital and community pharmacy (see Figure 5.19).

There was a significant association of responses to three of the statements with ethnicity (Asian or white).

- **Good job opportunities because of a shortage of pharmacists** (Asian respondents, very important 54.2%; white respondents, very important 32.0%; 22.2% difference) (Chi, $p < 0.001$).
- **Not working somewhere that is understaffed** (Asian respondents, very important 46.5%; white respondents, very important 34.1%; 12.4% difference) (Chi, $p < 0.025$).
- **Not working under pressure** (Asian respondents, very important 33.5%; white respondents, very important 23.9%; 9.6% difference) (Chi, $p < 0.05$).

The responses to five of the statements were significantly associated with gender; in each case females rated their importance higher.

- **Opportunities to interact with other pharmacists on a daily basis** (female very important 56.0%, male very important 42.5%, difference, 13.5%) (Chi, $p < 0.01$).
- **Opportunities to be part of a healthcare team** (female very important 77.9%, male very important 60.2%, difference, 17.7%) (Chi, $p < 0.001$).
- **Having a variety of work each day** (female very important 76.0%, male very important 62.7%, difference, 13.3%) (Chi, $p < 0.01$).
- **Having direct contact with patients** (female very important 81.6%, male very important 71.6%, difference, 10.0%) (Chi, $p < 0.01$).

- **Having the opportunity to use my specialist knowledge** (female very important 81.6%, male very important 67.4%, difference, 14.2%) (Chi, $p < 0.001$).

5.7.9 Discontinuation of Studies

Students were asked if they had considered discontinuing their pharmacy studies during the course of their degree (either changing their course or leaving university altogether). Nearly one quarter of respondents (23.2%) stated that they had. A number of reasons were given for this, outlined in Table 5.20 below, with mistaken choice of course (29.7%, $n=33$), personal problems (26.1%, $n=29$) and academic difficulties (23.4%, $n=26$) all being cited as major reasons.

Table 5.20: The reasons given by final year students for considering leaving their MPharm studies.

Reason	Percentage (n=111)
Mistaken choice of course	29.7%
Personal problems	26.1%
Academic difficulties	23.4%
Financial problems	1.8%
Other	18.9%

Although there was no significant difference between the two major ethnic subgroups in the whether the students had considered leaving the course, there were differences between the groups for the reason for wanting to leave. Students from the Asian subgroup were more likely to cite 'Mistaken choice of course' (46.9% of Asian respondents vs. 25.0% of white respondents; 21.9% difference) (Chi, $p < 0.025$). Analysis by sex indicated no statistically significant difference between the two groups.

5.7.10 Summary of Key Findings.

- A majority of students had definite plans as to their future career when they started the pharmacy degree but one third of these changed their plans during over the duration of their degree. The largest proportionate change was in those who originally planned to work in industry.
- In relation to the pharmacy degree course, the two factors that most influenced career choice were course content and the hospital visit/hospital teaching. This demonstrates the capacity for work-placed learning to influence career choice.
- The least influential features of the degree course upon career choice were the final year project and the fellow students' career choices. This reinforces the finding on choice of pharmacy as a career and choice of school of pharmacy that students make largely rational choices based on their own career trajectory and views and actions of friends and colleagues are of little importance.
- When asked about the influence of experience of pharmacy upon career choice, weekend or vacation experience in community pharmacy was the most influential factor followed by contact with pharmacists and weekend or vacation experience in hospital pharmacy. The difference between experience in community and hospital may reflect access since hospital experience is more difficult to achieve.

- Preregistration recruitment fairs and company recruitment material were not major influencing factors and a majority of students considered that they had no influence on career choice.
- Overall, students' career choice was little influenced by professional information in the Pharmaceutical Journal or attendance at pharmacy related meetings such as BPSA or local branch. The preregistration presentation by the RPSGB was also considered to be of little influence. However, it was noted that the Asian subgroup rating the factors as having a higher influence than the white subgroup.
- The six most important job characteristics (considered by more than 70% of respondents as very important) were security of the job, direct contact with patients, opportunity to use specialist knowledge, opportunity to be part of the healthcare team, variety of work on a daily basis and opportunity to move up a career ladder.
- More respondents considered that hospital pharmacy offered the six most important job characteristics than did community pharmacy.
- Just less than one quarter of respondents had considered changing their course or leaving their studies at least once.
- Although there were some differences between Asian and white students and between female and male students in this section of the study, these were differences in degree rather than major differences in views.
- These findings show that experience during the undergraduate years has a major influence upon final career choice. The strongly rational basis for initial choice of pharmacy as a subject of study is bounded by new experiences with the most significant being work experience, placements and personal interactions with pharmacists including pharmacist teachers. The nature of the course can therefore have a major impact upon students' expectations and ambitions.

6. Discussion

This study was taken against a background of major change for pharmacy and other healthcare professions. The government has published two strategy documents on the future of the pharmacy profession,^{25,26} both of which envisage changed ways of working for community pharmacists with greater public interactions and more interdisciplinary working. A separate report has summarised the issues for the future workforce.²⁷ Many of the changes in working practices heralded in these documents has now been formalised within the new national contract for community pharmacy.² The effect of this agenda for change is enhanced by the changes that are taking place in the retail environment. Longer opening hours, supermarket penetration into pharmacy services and altered consumer behaviour are all additional challenges to a profession that is poised on the interface between healthcare and commerce.

A key issue for the pharmacy profession will be to attract suitable students into pharmacy degree programmes with aspirations that match the developing needs of the profession. Unfortunately there have been few studies of the motivation, aspirations and career perceptions of UK students entering pharmacy programmes. We also know little about the factors that influence current students in their consideration of pharmacy as a career. These were the immediate drivers for the current study which has covered motivations and influences upon students in their decision to study pharmacy and their attitudes and to, and aspirations for, their future careers in pharmacy.

6.1 The Decision to Study Pharmacy

We have described the process of application for degree courses in pharmacy through the UCAS system. Although at the time of the study, a number of new schools of pharmacy were in process of opening, the UCAS data available (1998 to 2003) preceded entry to any of these schools. Nevertheless over this period the total intake to the established schools expanded by about one third against static numbers in the main applicant pool. This increase was achieved both by an increased intake from the main pool and by a rise in the intake from the UCAS clearing process. Over the period covered by this study, the intake increased from just over a half to around three quarters of the total applicant pool. This is consistent with an application system that is moving from selection to recruitment. If this trend continues it will have critical implications for the quality of the intake and for future attrition and academic standards within the pharmacy sector. One immediate effect will be a marked reduction in the control that admission staff will have over the offer process with less opportunity to undertake selection. Overall the admissions data raises concerns when it is considered in relation to the background of unplanned expansion in the number of UK undergraduate pharmacy providers.

The age profile of pharmacy applicants is consistent with that of a full time degree course where the majority of applicants derive directly from secondary education. However the undergraduate profile showed that pharmacy recruits from a diverse population, with a high representation of females and students of Asian background. Although the number of applications from black students was small, this was rising. Approximately 40% were drawn from the semi-skilled and manual classes, compared to medicine at 23%.

This study has consolidated the published studies^{12,13,15} on motivation for pharmacy by testing all the previously used motivation statements. We have produced a benchmark showing the relative importance students attach to each one. The decision to study pharmacy is based on a complex cognitive process over time, which is difficult to capture, particularly in a survey. However, taking all of this into account, it was clear that the employment opportunities were perceived to be the most important extrinsic influencer. This

is consistent with findings from the two previous UK studies,^{12,13} A number of intrinsic influencers were also important and these fell into two groups - likes and aptitude for science and personal aspirations for a good career. Overall, this is rational behaviour; the choice of pharmacy as a career to study fits with rational choice theory. The reasons considered most important were objective ones that related to self-interest, both in terms of the nature of the degree course and the advantages conferred by the degree. However, there was evidence that for female students, future patterns of working that are not central to career progression were considered more important than for males (e.g. flexible working).

One previous UK study¹² looked at a very restricted range of publicity material and our study confirmed the importance placed upon written material from the schools of pharmacy. Other contacts with the school, for example open days, also emerged as factors with a major influence upon student choice. However, as University prospectuses become more and more alike, there is a case for ensuring that the most is made of this influencer. It is also important to recognise that the main focus of university publicity is to market the individual provider. The emphasis is therefore upon the course and the institution rather than the profession. In this respect it is significant that the RPSGB was considered a very weak influence upon students in deciding to study pharmacy. The RPSGB does not have a relationship with pharmacy students or trainees until registration. This is a big missed opportunity that has major implications for the profession since in a dynamic professional environment, it limits the capacity of the RPSGB to communicate changes in professional need or function to the applicant pool. This is especially important in the current education climate and the RPSGB should consider how it can best exploit the opportunity provided by recent increased emphasis on 'employability' and higher education as an investment, related to changes in higher education funding. In addition, it should consider the implications of the age structure of the pharmacy undergraduate population, with reference to the under-representation of mature students relative to the student population as a whole.

Differences between first year and final year students were small in relation to their reasons for studying pharmacy. There were also only small differences between ethnic groups - of degree rather than kind. However, there were motivational differences between male and female students. Males were more interested in independence and opportunities for pharmacy ownership and self-employment.

6.2 Choice of School of Pharmacy

For the majority of students, pharmacy was their first and only choice when they applied for university while about a third studied pharmacy as a second choice to medicine or dentistry. This finding is consistent with the studies by Booth and co-workers¹² and Rees¹³ that about a third of students entering pharmacy had considered medicine or a medical related degree. In our study there was no association of first choice subject with gender and Rees found no association between consideration of medicine and gender. However our study did show a significant association with ethnicity, which has not been demonstrated before: a greater proportion of Asian than of white students named medicine and dentistry as their first choices. This fits with the finding that a smaller proportion of Asian than white students entered through the normal UCAS system.

The broad similarity of our findings with the two UK studies conducted in the 1980s suggests that there has been little change in students' perceptions of the relative status of pharmacy as a discipline to study. This may in turn be a contributory factor to our finding that only just over half the students in our study described their desire to study pharmacy at the start of their course as very strong. In this respect the differences between Asian and white students are interesting. Asian applicants form a significant part of the current UCAS applicant pool and our study provides evidence that this group has a lower motivation towards the subject.

There have been no major studies in the UK of factors that influence choice of school of pharmacy. For all students, the most important influences upon selection of school of pharmacy were the extrinsic factors of reputation of the school, reputation of the university and the nature of the course described in the prospectus. Intrinsic personal factors like friends in a university were considered much less important. While there were differences in importance linked to gender and to ethnicity, these did not influence those factors considered most important. As with choice of subject, this provides evidence that the choice of university is made on rational grounds based, so far as is possible, on objective information sources.

6.3 Image of Pharmacy as a Career

There is very little research on the image that the public have of pharmacy. Consumer studies highlight the dispensing and advisory role. The pharmacist is a rare occurrence in literature, television or films. The study tried to ascertain what image students, their friends and family and the general public have of pharmacy.

The majority of students were proud to be studying pharmacy and committed to the values and ideals of the profession. Being a pharmacist was an important part of them. There were no differences between first and final year students, between females and males or Asians and white students. However, when asked about pharmacy as a career there were substantial differences between the responses of females compared with males and of Asian students compared with white students. Female student had a more positive attitude than males and white students a more positive attitude than Asian students.

Over 90% of final year students considered that their friends and family regarded pharmacy as well paid and offering guaranteed employment. However around two thirds considered that their friends and family regarded it as a secondary profession to medicine and a third that it offered few opportunities for promotion and career development. When asked about pharmacists, the majority considered that their friends and family regarded pharmacists as well respected. However, there was evidence of realism in some of the views of community pharmacy: over a half considered family and friends to regard pharmacists as spending all day dispensing, working long hours and working under a lot of pressure. These measures of external perception really give an idea of how students see themselves in the health and social care hierarchy. The views on the relative status of pharmacy and medicine are also reflected in the application profile through UCAS where a sizeable minority of students enter pharmacy as a second choice subject. However, an important finding was that Asian students were significantly less positive in their perceptions of pharmacy as a career. Students from an Asian background make up a large part of the pharmacy applicant pool and further work is indicated to address the issue of Asian motivations and perceptions of pharmacy.

6.4 Future Career Ambitions

Choosing their career destination was bounded by a lack of knowledge, shown especially by the high interest in pharmacy ownership possibilities shown by first year students. The study showed later that socialisation into pharmacy over four years with course material, contact with teachers and work experience or practice placements helped students to make a more realistic decision.

Overall, the biggest difference between first and final year students was in their preferences for preregistration sector. Although multiple community pharmacy was the most frequently named sector for preregistration training and for first post after employment, more final year students than first year students named hospital and community as their preregistration

choices and more first year named split posts. About a fifth of first year did not know where they would want to undertake preregistration training. The differences are likely to reflect the greater experience of final years in pharmacy.

The principal difference between first years and final years in their views on first post after preregistration was the large increase in the number expecting to work in hospital pharmacy. There were marked gender differences: women were more interested in hospital pharmacy and practice/PCT work and males in industry and owning a business. Asians were more interested in community pharmacy than white students. Half of the final year students would consider work as a locum.

Over a third of first and final year students expected to be in the same sector of employment 5 years after registration. Significantly more females expected to be taking time out with their family or working flexible hours. A greater proportion of Asians than of white students expected to own a business or be self-employed. The findings show differences in career expectations between males and females and between Asian and white students. Asians show a preference for the commercial sector and have higher income expectations. Females show a preference for the hospital and NHS primary care sectors. It is important to note, however, that only about one fifth expected to be an employee - less than the numbers expecting to work as a locum, abroad, or in a self-employed capacity. We will return to this issue when considering the overall ambitions for work life balance.

These questions on future career ambitions revealed two other interesting findings. Firstly, the number of students who indicated an ambition to leave pharmacy was very low. All students in both years of the programme expressed the intention to complete preregistration training. After that, less than 5% of first year students and around 5% of final year students selected the option "outside pharmacy" for both the first post after preregistration training and their expected situation five-years after registration. This contrasts with findings from the workforce studies on pharmacy.^{3,4} However, it is important to recognise that the present findings are based upon the perceptions and ambitions of students who have no experience of working in the profession and so will only be indirectly affected, if at all, by any dissatisfaction with working conditions.²⁸

The second point concerns working as a locum pharmacist. Around 40% of both first and final year selected this as a career option for the first post after preregistration and about a quarter to a third for the post five years after registration. These findings are very similar to a number of studies of the pharmacy workforce^{3,4,29} and suggest that the attraction of locum working is apparent almost from the start of pharmacy education. The finding that Asian students were more likely than white students to plan work as a locum would be consistent with the greater importance this group placed upon self-employment. However, this finding is significant for future workforce planning given the parallel finding that one fifth of female students, the majority entrants to pharmacy, expected to be taking time out with the family five-years after registration.

6.5 Work Life Balance

Views on future working life were very similar between first and final year students. The option of working full time until retirement is no longer the accepted pattern for future work - this was anticipated by only about half the males and one quarter the females. Overall the proportions expecting to have a full time career until retirement were similar to those expecting to work as a locum and to buy their own business. As might be expected there were significant differences between the expectations of female and male students. More females expected to work full time and then part time for family reasons whereas more males expected to buy their own business. More Asians than white students expected to buy a business and work as a locum.

The four top career ambitions were the same for first and final years: owner of a community pharmacy, manager of a pharmacy, hospital pharmacy manager or Chief Pharmacist. Only about 10% of respondents selected the option employee in community pharmacy and less than 20% the role of multiple pharmacy management or administration. The picture is one of an ambition for a high level of independence. This confirms the low level of interest shown in employee work five years after registration and the early interest in locum employment. Again this trend was more apparent in Asian students whose ambitions focussed upon business ownership or work as a locum.

These findings raise important questions about the pharmacy career structure. Our study was of students who inevitably have a limited appreciation of the workplace. However, the overall message is of a wish for a degree of self determination in their everyday work. This contrasts with a profession that is moving towards employee status with reduced potential for truly independent practice. There are also some indications of the growth of a 'job' mentality here, with a weakening commitment to the lifetime working for an employer and increased interest in locum work. This would be consistent with early recognition of the problems of employee status in a profession dominated by retail multiple operators, including the stress of long working hours. In this context it is interesting to note that most students expected to work full time with a larger proportion of males than females expecting to work above 38 hours per week. This provides evidence that the career preferences are not simply linked to a desire to work part time. Further research is indicated here around the interaction of employee status and professional practice. There is a possibility that students are picking up concerns from working pharmacists. A number of studies^{30,31} have shown dissatisfaction amongst employee pharmacists with the long hours and conditions of work while in a large study in the West Midlands, one third of pharmacists indicated a wish to reduce their working hours²⁸ and large numbers were dissatisfied with their career and professional role³².

6.6 Influences of the School of Pharmacy

The majority of final year students considered that they had a definite career plan when they commenced their pharmacy studies but a third changed this plan over the course of their degree. The biggest career influences on students whilst studying pharmacy were experiences outside the school of pharmacy - weekend or vacation work and talking to other pharmacists. The main influences within the school of pharmacy were the course content, hospital pharmacy visits and placements and pharmacy practice lecturers. Visits to hospitals were the major positive influence towards hospital pharmacy as a career. A range of professional influences had very little importance to students and these included the Pharmaceutical Journal, the BPSA, local RPSGB branch meetings and information from the RPSGB. As in the case of entry to the course, the professional body had little direct influence upon career ambitions or plans of undergraduate students.

Final year students considered that the six most important career characteristics were job security, direct contact with patients, opportunity to use specialist knowledge, opportunity to be part of the healthcare team, variety of work on a daily basis and opportunity to move up a career ladder. Hospital pharmacy was seen as more likely than community to offer the full range of these. As in the case of motivation to study pharmacy, career ambition at the end of the final year was based upon a mixture of intrinsic and extrinsic characteristics with job security in the vanguard.

These findings show that experience during the academic course has a major influence upon final career choice destination. The strongly rational basis for initial choice of pharmacy as a subject of study and future career is bounded by new experiences. The most significant were work experience, placements and personal interactions with other pharmacists including pharmacy practice teachers. The nature of the course can therefore have major impact upon the ambitions and expectations of students and this study provides evidence

that the most significant factor is contact with practice during the undergraduate years. This has major implications for pharmacy since at present; arrangements for practice placements in the undergraduate degree are *ad hoc* with no national funding.

6.7 Limitations of the Survey

The survey instrument was piloted several times with undergraduates to ensure its validity and reliability. It was peer reviewed by the steering committee and screened by the named contact person in each school and sometimes the School Board or equivalent.

Validity is also determined by the final response rate. The absolute response rate of 35.2% is disappointing, but not unexpected from the context of the survey described in section 3.2.3. In real terms, the quantity of responses from each school, ranging from 7 to 224. This lowest response was omitted from the analysis. For a national project of this size to succeed it does need the active support and involvement of a key stakeholder in each school. In this case there was support but not in all cases of a proactive nature in spite of the funding inducement.

The mode of administration of questionnaire was also important. We decided not to use a web based approach. There is a growing body of research which compares methods of survey administration to higher education students. Aldridge and Rowley³³ (1998) compared two modes of administration: electronic and paper form. The authors obtained a higher response rate from the tutor delivered paper approach than electronic. A systematic study from the USA points to varying response rates; most studies reviewed showed paper and pencil surveys achieved higher response rates among college students than online surveys³⁴.

The highest responding school to this survey were those where questionnaires were handed out to undergraduates to complete - the lecture completion method - as predicted by Audin and co-workers³⁵. We would have liked to use this method in all schools but were not able to do so because in most institutions, this approach was not allowed for ethical reasons. However, readers should note that survey response rates are falling in all fields of research, within university studies, in pharmacy practice and in surveys of the NHS patients, as illustrated by the examples in Box 6.1.

Box 6.1: examples from literature of response rates from students, pharmacy and the general public.

Within Aston Business School the ABS Widening Participation Study³⁶ self completion survey questionnaire, sent out all 412 first year students achieved a 20% response.

The University of Leeds University Quality of Life and Learning survey³⁵ of 3667 students achieved a 22% response rate to the first survey, and 41% response rate to the second survey after learning the administration lessons from the first round.

The NHS Picker Patient Experience survey³⁷ achieved a 65.67% response.

In pharmacy practice research a study of pre registration pharmacists in London, Eastern and South East coasts³⁸ regions perceptions of readiness to undertake clinical pharmacy activities had 42.7% response rate.

Data skewing or potential bias

A high response rate is needed to avoid bias introduced by non responders. In this case the school response rate varied widely from a minimum of 14.06% to a maximum of 82.96% (data from a school with a 2.54% response rate was omitted from the study). So it is the variable response rate that caused concern. Although it was not the intention of the study to make comparisons between schools, but rather to present a national picture, there is a problem of under-representation of data from some schools.

The variability in response rate also resulted in a limit to the range of cross-tabulation that could be undertaken. Within this report, male/female comparisons and white/Asian comparisons were the only cross-tabulation attempted. Any additional sub-analysis (including analysis of additional minor ethnic groupings) was not deemed statistically viable owing to the low numbers in each sub-grouping.

Finally, it was acknowledged that only responses from Schools with Great Britain were received (i.e. excluding Northern Ireland). Therefore the responses cannot be generalised to the entire United Kingdom.

6.8 Conclusions

This study has consolidated all the previous knowledge on motivation for pharmacy as a career and choice of school of pharmacy. Both decisions emerge as highly rational based upon a mix of extrinsic factors, most notably employment and financial reward, and intrinsic factors such as academic preferences and personal career goals. The study has shown significant differences in attitudes between male and female students, but the most unexpected and striking difference was the difference between white and Asian students. Whilst many of the gender differences are already known, such as a preference for hospital pharmacy and the opportunity for part time employment, the same cannot be said of ethnicity. With one or two notable exceptions, there has been very little research undertaken on the ethnicity differences of pharmacists. The profession itself has only recently begun to collate ethnic origin of its registered members. Yet this study does suggest more research is needed to help with recruitment, education and workforce prediction needs are to be met.

The study has also raised a number of questions about the career image of pharmacy and about career opportunities in pharmacy. Pharmacy emerges as a secondary profession to the mainline health professions of medicine and dentistry. The most positive perceptions link to job opportunity and financial reward with realistic assessments of work conditions such as long working hours and questions about the potential for career advancement. There is evidence of a mismatch between students' ambitions and reality - particularly in the area of business ownership and independent working. There is also a strong indication that students no longer subscribe to the typical career path of lifelong working for an employer until retirement. These findings are of significance given the current movement of pharmacy towards an employee profession. Further research is indicated to develop our understanding in this area.

The schools of pharmacy emerge as major influencers of students' choice and ambition both in the application process prior to joining a pharmacy degree and in terms of career ambitions during the degree. Contact with pharmacy and degree placement studies were of major impact and this provides further evidence of the importance of developing a national strategy for work placed learning in the pharmacy degree. In contrast, the professional body and publications and activities related to it, emerged as a very weak influence upon students both in their decision to study pharmacy and in their career choices during study. This has important implications for the ability of the RPSGB to influence the workforce supply and the RPSGB must endeavour to develop better schools liaison.

6.9 Further work

This study has achieved its aim to establish a baseline understanding of the career aspirations, motivations and expectations of students within undergraduate pharmacy education in the UK. In assembling and analysing the data, a number of areas for further work have been highlighted in this report. These include the following:

- The need for exploration of the insight into popular images of the current pharmacy profession from non-pharmacy groups.
- Further exploration of the reasons behind hypothetical preferences indicated by students in their responses to work/life balance preferences, including the differences between male and female preferences and preference differences between different ethnic groups.
- Further qualitative work to expand on the reasons why final year students appear to be less committed to pharmacy than first year students.
- Further work on the reasons behind drop-out from pharmacy courses.
- Comparisons between the current profession and student choices. For example, how proportions choosing different career options compare to actual current workforce patterns within the different sectors of the profession and how proportions wanting to own a pharmacy compare with current levels of pharmacy ownership.
- Further work to extrapolate the reasons why more students have a preference to develop careers in community pharmacy despite the fact that they perceived community practice to be more isolated, less linked to the health team, with fewer opportunities to use specialist knowledge and less variety of tasks, when compared to hospital practice.

Finally, there are a number of additional cross-correlations that can be performed with the current data, for example, what does the desire to undertake a 2nd degree correlate with. Although useful, the reporting of these findings is beyond the scope of this report and will be published separately.

7. References

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8. Appendix: The Student Survey



**Royal
Pharmaceutical
Society**
of Great Britain



Pharmacy Undergraduate Students' Career Choices and Expectations 2005: A Survey of Final Year Students

HOW TO COMPLETE THIS QUESTIONNAIRE

This research study has been commissioned by the Royal Pharmaceutical Society of Great Britain to inform workforce planning.

This questionnaire has been designed for self-completion by **FINAL YEAR** students and the survey has the support of the BPSA and the UK Schools of Pharmacy. This is an opportunity for you to participate. We value your opinions and welcome your contribution. However, whether you participate or not will have no effect upon either your pharmacy degree or pre-registration year.

What to do.

Read each question carefully. Most of the questions can be answered by putting a tick ✓ in a box next to the answer you want to give. Sometimes you are asked to write your answer in the space under the question, please write clearly. It will take you no longer than 30 minutes to complete. We will treat your answers with the strictest confidence.

**In the event of queries contact Laura Clarke on clarkeld@aston.ac.uk
Pharmacy Practice Research Group, Aston University, Birmingham, UK.**

Section One: Motivations and Influences

In this section, we have listed ways in which pharmacists have said they were influenced to study pharmacy. Read through each list before you begin to write your answers. If there is anything we have missed, you can write it in the section at the end.

Q1. Here are some education related reasons why people choose to study pharmacy. For each option a-h below, indicate how important each one was for you (scale 1-4, where 1 is important and 4 is not important).

	Reason	1 Important	2	3	4 Not Important
a	A subject teacher at school / college	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	A careers teacher at school / college	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	A visit to a careers fair / conference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	A visit to a university open day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	A university prospectus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Royal Pharmaceutical Society of Great Britain literature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Radio or TV programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Careers leaflets or booklets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q2. Here is a list of more personal influencers who might have encouraged you to study pharmacy. How important would you rate the influence from each on you personally (scale 1-4, where 1 is important and 4 is not important)?

	Reason	1 Important	2	3	4 Not Important
a	My parents encouraged me to choose pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	My family encouraged me to choose pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Someone in my family who owns a pharmacy influenced me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	I was influenced by a pharmacist I know, as a role model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	My friends influenced me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	I was influenced by pharmacy work experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q3. The following reasons have been given by people as influences on their decision to choose to study pharmacy as a career choice. How strong was each reason for you personally (scale 1-4, where 1 is a strong reason and 4 is not a strong reason)?

	Reason	1 Strong	2	3	4 Not Strong
a	I liked science / was good at science at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	I wanted to do a science based course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	I wanted to work in a well respected profession	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	I wanted a job with good career opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	I thought pharmacy would be intellectually satisfying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	I wanted a job where I am socially useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	I wanted to work with patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	I wanted to own my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	I wanted the opportunity for self-employment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	I wanted the opportunity for part time work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	I was attracted by the financial rewards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l	I wanted flexible working hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m	I wanted a profession where you can always get a job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n	I wanted to work with medicine or in the medical profession	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o	I wanted to study medicine/dentistry or another medically related subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was/were there any other event(s) or person(s) that we have not offered here?

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Section 2: Choice of School of Pharmacy (SOP)

Now some questions about your choice of School of Pharmacy.

Q4. When you were making your choice about what to study at university, how committed were you to pharmacy?

Pharmacy was my first and only choice	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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If answer is Yes,
GO TO Q6 ⇒

Q5. If you have answered “No” to Question 4, which other subjects did you consider?
Tick one box only.

a	Pharmacy was my second choice to medicine	<input type="checkbox"/>
b	Pharmacy was my second choice to dentistry	<input type="checkbox"/>
c	Pharmacy was my second choice to another science degree	<input type="checkbox"/>
d	I wanted to work in any health related field	<input type="checkbox"/>
e	I came into pharmacy through clearing	<input type="checkbox"/>
f	Pharmacy matched the A Levels I was taking	<input type="checkbox"/>

Q6. Which of the following aspects influenced your choice of School of Pharmacy (SOP)? (Scale 1-4, where 1 is important and 4 is not important.)

	Reason	1 Important	2	3	4 Not Important
a	Nature of the course as described in the prospectus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Reputation of the SOP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	An open day visit to the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Reputation of the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Reputation of the city/town where the university is located	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Location of the university in relation to where I lived	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Availability of accommodation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	University facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Personal recommendation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 6 continued...

	Reason	1 Important	2	3	4 Not Important
j	Friends at pharmacy school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	My parents wanted me to attend this SOP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l	This was the only place I could get into	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m	Family at this university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n	Matching entrance grades to predicted expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q7. Taking the UCAS definitions of *CI*, *CF*, *Clearing*, how did you get a place at the school where you are now studying? **Tick one box only.**

a	Your firm choice (CF)	<input type="checkbox"/>
b	Your insurance choice (CI)	<input type="checkbox"/>
c	Entry through clearing	<input type="checkbox"/>

Q8. How strong would you say your desire **to study pharmacy** was when you started pharmacy school? **Tick one box only.**

Very strong	Fairly strong	Not very strong	Not at all strong
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q9. How strong would you say your desire **to be a pharmacist** was when you started pharmacy school? **Tick one box only.**

Very strong	Fairly strong	Not very strong	Not at all strong
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Career Image

Q10. This question contains statements about your commitment to pharmacy as a career. Tick the **ONE** box which show to what extent you agree or disagree with the following statements.

a) *I am proud to tell others that I am studying pharmacy*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) *I am strongly committed to the values and ideals of the pharmacy profession*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c) *Being a pharmacist is an important part of who I want to be*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11. Listed below are several statements that describe your attitudes about pharmacy as a career. For each statement tick **ONE** box to show the level with which you agree or disagree.

a) *If I could pick a different occupation which paid the same amount, I would probably change degree.*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) *I definitely want a career in pharmacy.*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c) *If I could do it all over again, I would choose to study for the same profession.*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d) *Pharmacy is the ideal profession for a career for life.*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

e) *I regret that I entered pharmacy school.*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

f) *I intend to undertake a second degree after completing pharmacy.*

Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 4: Future career ambitions

Q12. Thinking ahead, upon graduation, in which field of practice will you complete your pre-registration training? **Tick one box only.**

a	Community retail – <i>Chain/Multiple</i>	<input type="checkbox"/>
b	Community retail – <i>Independent</i>	<input type="checkbox"/>
c	NHS hospital	<input type="checkbox"/>
d	Hospital / Community split post	<input type="checkbox"/>
e	Hospital / Industry split post	<input type="checkbox"/>
f	Community / Industry split post	<input type="checkbox"/>
g	Not sure yet	<input type="checkbox"/>
h	I do not want to complete pre-registration training	<input type="checkbox"/>
i	Other Please specify: _____	<input type="checkbox"/>

Q13. Upon registration, in which field of pharmacy will you look for a job?
Tick all the boxes which are true for you.

a	Community retail – <i>Chain/Multiple</i>	<input type="checkbox"/>
b	Community retail – <i>Independent</i>	<input type="checkbox"/>
c	NHS hospital	<input type="checkbox"/>
d	NHS Primary Care Trust	<input type="checkbox"/>
e	Industry	<input type="checkbox"/>
f	Academia (university)	<input type="checkbox"/>
g	Research	<input type="checkbox"/>
h	Pharmacy policy development	<input type="checkbox"/>
i	Non-pharmacy	<input type="checkbox"/>
j	Consultant pharmacist	<input type="checkbox"/>
k	Not sure yet	<input type="checkbox"/>
l	Work as a locum pharmacist	<input type="checkbox"/>
m	Own my own pharmacy business	<input type="checkbox"/>
n	I am not sure I will work (within paid employment)	<input type="checkbox"/>

Q14. Thinking ahead, five years after qualifying as a pharmacist, where do you expect to be working? **Tick all the boxes that are true for you.**

a	In the same sector of the profession as my pre-registration placement	<input type="checkbox"/>
b	In a different sector of the profession as my pre-registration placement	<input type="checkbox"/>
c	In the same organisation as my pre-registration placement	<input type="checkbox"/>
d	In a different organisation as my pre-registration placement	<input type="checkbox"/>
e	Self-employed	<input type="checkbox"/>
f	An employee of an organisation	<input type="checkbox"/>
g	Employed on a temporary or locum basis	<input type="checkbox"/>
h	Taking time out for family	<input type="checkbox"/>
i	Taking time out to travel	<input type="checkbox"/>
j	Working as a locum	<input type="checkbox"/>
k	Not working in pharmacy	<input type="checkbox"/>
l	Work abroad	<input type="checkbox"/>
m	Do not know	<input type="checkbox"/>
n	Other Please specify: _____	<input type="checkbox"/>

Q15. In five years after you qualify, what level of salary do you expect to earn?
Tick one box only.

a	Under £20,000	<input type="checkbox"/>
b	£20,000 - £29,999	<input type="checkbox"/>
c	£30,000 - £39,999	<input type="checkbox"/>
d	£40,000 - £49,999	<input type="checkbox"/>
e	£50,000 - £59,999	<input type="checkbox"/>
f	£60,000 +	<input type="checkbox"/>
g	Do not Know	<input type="checkbox"/>

Section 5: Work Life Balance

Q16. Which of the following statements best describe your plans for your future working life? **Tick all the boxes that are true for you.**

a	Full time career until typical retirement age (65)	<input type="checkbox"/>
b	Work full time, then part time if I have a family	<input type="checkbox"/>
c	Intend to travel, working holidays	<input type="checkbox"/>
d	Intend to work as a locum	<input type="checkbox"/>
e	Intend to buy my own business	<input type="checkbox"/>
f	Work abroad	<input type="checkbox"/>
g	Practice/PCT pharmacist	<input type="checkbox"/>
h	No clear intention yet	<input type="checkbox"/>
i	Other <input type="checkbox"/>	<input type="checkbox"/>
	Please specify: _____	

Q17. What is the highest level which you would like to attain in your pharmacy career? **Tick your top 3 ambitions.**

a	Employee in community retail pharmacy	<input type="checkbox"/>
b	Manager in community retail pharmacy	<input type="checkbox"/>
c	Owner of a community retail pharmacy	<input type="checkbox"/>
d	Multiple community retail management / administration	<input type="checkbox"/>
e	Practice/PCT pharmacy	<input type="checkbox"/>
f	Hospital pharmacist	<input type="checkbox"/>
g	Hospital pharmacy manager	<input type="checkbox"/>
h	Chief Pharmacist	<input type="checkbox"/>
i	Academic Pharmacist	<input type="checkbox"/>
j	A position outside pharmacy	<input type="checkbox"/>
k	Not sure yet	<input type="checkbox"/>
l	Other <input type="checkbox"/>	<input type="checkbox"/>
	Please specify: _____	

Q18. How many hours a week do you want to work?
Tick one box only.

a	Less than 30	<input type="checkbox"/>
b	30 – 38	<input type="checkbox"/>
c	More than 38	<input type="checkbox"/>

Section 6: Your experience as a final year student

These questions are all about you as a final year student.

Q19. At the start of your MPharm degree, did you have a definite idea of which sector of the profession you wanted to work in after your pre-registration year?
Tick one box only.

a	Yes, community pharmacy	<input type="checkbox"/>
b	Yes, hospital pharmacy	<input type="checkbox"/>
c	Yes, industrial pharmacy	<input type="checkbox"/>
d	No	<input type="checkbox"/>
e	Other (not as a pharmacist) Please specify: _____	<input type="checkbox"/>

Q20. Over the course of your degree, has this idea changed?
Tick one box only.

a	Yes, changed sector	<input type="checkbox"/>
b	Yes, no longer want to work in pharmacy	<input type="checkbox"/>
c	No	<input type="checkbox"/>

Q21. Have you ever considered changing courses or dropping out of your pharmacy course during your degree?
Tick one box only.

a	Yes	<input type="checkbox"/>
b	No	<input type="checkbox"/>

If answer is No,
GO TO Q23 ⇒

Q22. If you have answered “Yes” to Question 21, why was this?
Tick one box only.

a	Mistaken choice of course	<input type="checkbox"/>
b	Financial problems	<input type="checkbox"/>
c	Personal problems	<input type="checkbox"/>
d	Academic difficulties	<input type="checkbox"/>
e	Other Please specify: _____	<input type="checkbox"/>

Q23. To what extent have the following factors from your experience on your degree course influenced your future career choice?
 For each factor, tick **ONE** box to show the level to which you were influenced.

	Factor	Large influence	Small influence	No influence
a	Course content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Teacher Practitioners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Pharmacy Practice lecturers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Other lecturers on the MPharm course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Hospital pharmacy visit/teaching organised by the School of Pharmacy as part of the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Community pharmacy visit/teaching organised by the School of Pharmacy as part of the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Fellow students career choices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Experience of your final year project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Other (please state)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q24. To what extent have the following factors from outside your degree course influenced your future career choice?

For each factor, tick **ONE** box to show the level to which you were influenced.

	Factor	Large influence	Small influence	No influence
a	Weekend or vacation experience in hospital pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Weekend or vacation experience in community pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Talking generally to other practicing pharmacists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Attendance at a pre-registration recruitment fair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Company recruitment material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Debt from your time at university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Other (please state)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q25. To what extent have the following factors from within the profession of pharmacy influenced your future career choice?

For each factor, tick **ONE** box to show the level to which you were influenced.

	Factor	Large influence	Small influence	No influence
a	Letters page of the Pharmaceutical Journal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Jobs and recruitment section of the Pharmaceutical Journal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Pharmacy news in the Pharmaceutical Journal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Pharmacy news in other journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Research articles in the Pharmaceutical Journal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	The new Community Pharmacy Contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Pre-registration presentation by the RPSGB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Attendance at RPSGB local branch meeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	BPSA activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Other (please state)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

These questions are about working as a pharmacist. **PLEASE ANSWER BOTH QUESTIONS.** For each statement please tick the **ONE** box that represents your view.

Q26a. Do you think working as a pharmacist in **community pharmacy** would mean...

		Yes	No	Don't know
a	Good job opportunities because of a shortage of pharmacists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Opportunities to interact with other pharmacists on a daily basis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Opportunities to be part of a healthcare team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Working under pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Working long hours (e.g. over 40 hours per week)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Having a variety of work each day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Having direct contact with patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Opportunities to move up a career ladder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Having a secure job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Working somewhere that is understaffed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	Having the opportunity to use my specialist knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q26b. Do you think working as a pharmacist in **hospital pharmacy** would mean...

		Yes	No	Don't know
a	Good job opportunities because of a shortage of pharmacists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Opportunities to interact with other pharmacists on a daily basis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Opportunities to be part of a healthcare team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Working under pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Working long hours (e.g. over 40 hours per week)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Having a variety of work each day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Having direct contact with patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Opportunities to move up a career ladder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Having a secure job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Working somewhere that is understaffed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	Having the opportunity to use my specialist knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q27. What is important to you when thinking about which sector to work in as a pharmacist? For each factor, please tick the **ONE** box to show the level of importance to you.

	Factor	Very important	Quite important	Not important
a	Good job opportunities because of a shortage of pharmacists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Opportunities to interact with other pharmacists on a daily basis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Opportunities to be part of a healthcare team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Not working under pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Not working long hours (e.g. over 40 hours per week)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Having a variety of work each day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Having direct contact with patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Having opportunities to move up a career ladder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Having a secure job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Not working somewhere that is understaffed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	Having the opportunity to use my specialist knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q28. How true do you think your **family and friends** think the following statements about pharmacy are? For each statement please tick **ONE** box to indicate whether it is true or false.

	Statement	True	False
a	There is guaranteed employment in pharmacy	<input type="checkbox"/>	<input type="checkbox"/>
b	There are few opportunities for promotion and career development in pharmacy	<input type="checkbox"/>	<input type="checkbox"/>
c	Pharmacy is a secondary profession to medicine	<input type="checkbox"/>	<input type="checkbox"/>
d	Pharmacy is a well paid job	<input type="checkbox"/>	<input type="checkbox"/>
e	Pharmacists spend all day dispensing prescriptions	<input type="checkbox"/>	<input type="checkbox"/>
f	Pharmacy is part of the NHS	<input type="checkbox"/>	<input type="checkbox"/>
g	Pharmacists work under a lot of pressure	<input type="checkbox"/>	<input type="checkbox"/>
h	Pharmacists work long hours	<input type="checkbox"/>	<input type="checkbox"/>
i	Pharmacists are well respected by the general public	<input type="checkbox"/>	<input type="checkbox"/>

Q29. This question explores the status of pharmacy compared to other healthcare professions. How do you think the **general public** sees the status of pharmacy when compared to...?

	Profession	Higher status than pharmacy	Same status as pharmacy	Lower status than pharmacy	Don't know
a	Audiology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Dentistry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Health service manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Medicine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Nursing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Occupational Therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Optometry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Physiotherapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Podiatry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Radiology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	Social work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q30. Is there anything that you have experienced during your four years in a School of Pharmacy that has particularly influenced your thoughts towards pharmacy as a career (positive or negative experiences)? Please state:

.....

.....

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Section 7: About you

And finally, some questions about you.

Q31. Are you: Male Female

Q32. How old are you?

17 – 19

20 – 21

22 – 23

24 – 25

26 +

Q33. Which of the following best describes your religion?
Tick one box only.

- Buddhism
- Christianity
- Hinduism
- Islam
- Judaism
- Sikhism
- None
- Other

If Other, please specify: _____

Q34. Which of the following describes your status?
Tick one box only.

Single or living as single	<input type="checkbox"/>
Married or cohabiting	<input type="checkbox"/>

Q35. Do you have any dependent children?
Tick one box only.

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

Q36. How would you best describe your ethnic background?
Tick one box only.

White	
British	<input type="checkbox"/>
Irish	<input type="checkbox"/>
Other White background	<input type="checkbox"/>
(please state)
Black or Black British	
Black Caribbean	<input type="checkbox"/>
Black African	<input type="checkbox"/>
Any other Black background	<input type="checkbox"/>
(please state)
Dual Heritage	
White and Black Caribbean	<input type="checkbox"/>
White and Black African	<input type="checkbox"/>
White Asian	<input type="checkbox"/>
Any other Mixed background	<input type="checkbox"/>
(please state)
Asian	
British Asian	<input type="checkbox"/>
Indian	<input type="checkbox"/>
Pakistani	<input type="checkbox"/>
Bangladeshi	<input type="checkbox"/>
Any other Asian background	<input type="checkbox"/>
(please state)
Chinese or Other Ethnic Group	
Chinese	<input type="checkbox"/>
Any other background	<input type="checkbox"/>
(please state)
Don't want to say	<input type="checkbox"/>

Q37. What academic qualifications do you have? Please state the grades you achieved in each subject.

i) A Levels:

	Subject	Grade	
a	Chemistry		
b	Biology		
c	Mathematics		
d	Physics		
e	IT		Subject
f	Other (please state)		
g	Other (please state)		

ii) Non-A levels. If you entered university through a non-A level route, please state you qualifications and the grades obtained.

Qualification	Grade achieved

Q38. Are you a/an

Home/EU student?	<input type="checkbox"/>
Overseas student?	<input type="checkbox"/>

If from outside the UK, please state your country:

Q39. Have you declared a disability, special need or medical condition (as described on the UCAS form)? **Tick the relevant boxes only.**

a	None	<input type="checkbox"/>
b	A specific learning difficulty (e.g. dyslexia)	<input type="checkbox"/>
c	Blind or partially sighted	<input type="checkbox"/>
d	Deaf or hard of hearing	<input type="checkbox"/>
e	Use a wheelchair or have mobility difficulty	<input type="checkbox"/>
f	Autistic Spectrum Disorder or Aspergers Syndrome	<input type="checkbox"/>
g	Mental health difficulties	<input type="checkbox"/>
h	A disability that cannot be seen, e.g. diabetes, epilepsy	<input type="checkbox"/>
i	A disability, special need or medical condition that is not listed above Please state.....	<input type="checkbox"/>

Q40. Which School of Pharmacy do you attend?
Tick one box only.

Aberdeen (Robert Gordon)	<input type="checkbox"/>	Leicester (DMU)	<input type="checkbox"/>
Bath	<input type="checkbox"/>	Liverpool (JMU)	<input type="checkbox"/>
Belfast (Queen's)	<input type="checkbox"/>	London (King's)	<input type="checkbox"/>
Birmingham (Aston)	<input type="checkbox"/>	London (SOP)	<input type="checkbox"/>
Bradford	<input type="checkbox"/>	Manchester	<input type="checkbox"/>
Brighton	<input type="checkbox"/>	Nottingham	<input type="checkbox"/>
Cardiff	<input type="checkbox"/>	Portsmouth	<input type="checkbox"/>
Glasgow (Strathclyde)	<input type="checkbox"/>	Sunderland	<input type="checkbox"/>

Thank you very much for completing this questionnaire. If you have any other comments that you would like to make about your pharmacy undergraduate education, enter them in the box below.

Additional Comments.

Please do not write below this line – for administrative use only.