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Motivational factors for choosing dentistry as a career: A survey of undergraduate dental students in Ireland

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Introduction

Dentistry is a highly sought after university course but the motivations for students choosing dentistry as a career in Ireland are not well understood.

Objective

The aim of this study is to investigate the reasons why students choose dentistry as a professional career in Ireland.

Methods

All undergraduate dental students (n=225) in an Irish university in the academic year 2016/17 were invited to participate in a cross-sectional survey. Participants were asked to rate a list of 12 factors that influenced their decision to pursue dentistry as a career.

Results

The response rate was 85.3% (n=192). The majority of the participants were female (65%), aged between 18 and 23 years (69%) and from the European Union (60%). Over half (55%) entered the programme directly from secondary-level education. The motivational factor with the highest median rating of importance was altruism.

Conclusion

Motivational factors influencing dental students included altruism, financial security, and independence. Having a previous family connection with the dental profession did not feature strongly. Positive previous experiences of dentistry and dental professionals emerged as a new motivational factor. Nationality, mode of entry and year of study influenced the motivational factors of the students surveyed.

INTRODUCTION

International studies indicate that career security and a desire to work with and help people remain consistent motivating factors for studying dentistry.^{1,2} In a survey of final-year dental students in King's College London Dental Institute conducted in 2008, financial benefits and professional status were significant influencers in career choice.³ Similarly, a study on first-year dental students' motivations conducted in Bulgaria in 2013 found that independence, financial security and 'prestige' emerged as the predominant motivational factors for choosing a career in dentistry.⁴ In a study carried out in Malaysia in 2015, academic factors and a desire to work in healthcare and with people were important motivations.⁵

Motivation is an important factor in the achievement of personal goals. This is particularly relevant when embarking on a challenging university course such as dentistry, where students must perform well academically, develop communication and social skills, and learn fine motor

skills.⁶ The type of motivation (intrinsic or extrinsic) can impact on dental students' study strategies, self-esteem and academic performance.⁷ Some motivating factors for choosing dentistry as a career, e.g., altruism, have been linked to higher rates of academic burnout in dental students.⁸ The relevance of different motivators for choosing dentistry has also been found to vary by demographic factors such as gender and ethnic group, and identifying students' motivation and career expectations may inform strategies to better recruit and retain a diverse dental workforce.⁹

While reasons for studying dentistry have been investigated in other countries, such explorations are limited in Ireland. Hallissey *et al.*, in a study of undergraduate dental students in Ireland in 1998/99, found that motivational factors extrinsic to dentistry, such as ease of employment, opportunities for self-employment and regular working hours, emerged as the most important factors.¹⁰ These were followed closely by dentistry being perceived as highly remunerative and by the desire to help/treat people.¹⁰ Since

then, local entry paths to dentistry have been extended to attract a more diverse range of students, with particular emphasis on postgraduate students. There are currently two universities (University College Cork and Trinity College Dublin) offering dental programmes in the Republic of Ireland, with four routes of entry: directly from second-level education through a central applications system; graduate entry; entry as a mature student; or, entry as an international student. At present in Ireland, there is no formal interview process in order to study dentistry as a career for direct entry from second-level education.

The aim of this study is to investigate the reasons why students choose dentistry as a professional career, and to rank and correlate the factors that prompted the career choice of dentistry in undergraduate dental students attending a university dental school in Ireland. This research aims to explore if differences exist in motivational factors by gender, year of study, between Irish and international students, and between direct entrants from secondary education and mature entrants. Furthermore, this study compares the motivational factors for dental students in the 1990s in Ireland to those who are undertaking dentistry today.

MATERIALS AND METHODS

ETHICAL APPROVAL

Ethical approval for this study was provided by the Social Research Ethics Committee (SREC) in University College Cork (Reference number Log 2016-020).

PARTICIPANTS

All students on the programme (years one to five) in the academic year 2016/17 ($n=225$) were invited to participate in the study by an independent gatekeeper (dental administrator) who was not involved in the teaching of the programme. Students were provided with an information sheet, consent form, and paper-based self-administered questionnaire.

SURVEY INSTRUMENT

To facilitate comparison of the results over time, the majority of questions used were from the pre-tested and validated 1998/99 survey conducted by Hallissey *et al.*¹⁰ Data collected included:

- gender;
- age group;
- nationality (Irish, other European Union country, or non-European Union country);
- year of study;
- type of admission; and,
- whether dentistry was the student's first choice.

Students were asked to score a list of 12 factors that may have influenced their choice of degree, from 0 to 10, where zero represents a factor that had no influence on their decision and 10 represents a very influential factor.

Students were also provided with the opportunity to specify any other influential factors in a free text question.

STATISTICAL ANALYSIS

Categorical data were summarised using counts and percentages. Ratings of importance for factors were tested for normality and summarised using medians and quartiles for skewed data. Non-parametric tests were used to compare ratings across groups (gender, nationality, dentistry first choice or not, type of entry, year of study) with the Mann-Whitney test used for two groups and the Kruskal-Wallis test used for three or more groups. A 5% level of significance was used for all tests. Spearman's rank correlation coefficient (r_s) was used to correlate ratings across factors. SPSS Statistics for Windows Version 24 was used for all analysis.

RESULTS

There were 192 responses to the survey (response rate of 85.3%) and the results are presented in **Tables 1-3**. The characteristics of those who responded are described in **Table 1**. The majority of the participants were female (125/192, 65%), aged between 18 and 23 years (132/192, 69%), and from the European Union (116/192, 60%). Over half (105/192, 55%) entered the programme directly from secondary-level education. Of these, the majority (70/105, 67%) had selected dentistry as their first choice of study. For those who hadn't selected dentistry as their first choice, medicine was the most common alternative (32/35, 91%).

Of the students who had not entered the programme directly from secondary-level education (e.g., graduate entry or mature students), the majority (51/81, 63%) always intended becoming a dentist. Of the 63 students who already had a primary degree before entering the programme, the most common primary degree was in the biological sciences (**Table 2**).

A summary of the ratings of importance (on a scale of 0 to 10) for the factors influencing choice of dentistry as a career is given in **Table 3**, both for the current survey and for the previous survey in 1998/99. The highest median rating of importance in the current survey was given to 'I want to treat and help people or improve their appearance' with a median rating of 9. 'I want to be self-employed/own a private dental practice', 'Dentistry has more regular hours than other caring professions', 'Dentistry provides good financial remuneration', 'I have the option to seek employment overseas', 'I have the option to further my career in postgraduate training' and 'I like to work with my hands' also had high ratings of importance with a median of 8.

Nationality influenced the rating of the importance of the factor 'I like to work with my hands', with non-EU students rating this slightly more important (median of 9 for non-EU compared to 8 for Irish students and 8 for other EU students; $p=0.01$). Irish students rated the importance of the factor 'I want to be self-employed/own a private dental practice' lower than either EU students (outside of Ireland) or non-EU students (median of 6 for Irish students

Characteristic	n (%)
Gender	
Male	67 (34.9%)
Female	125 (65.1%)
Age group	
18-23	132 (68.8%)
24-30	55 (28.6%)
>30	5 (2.6%)
Nationality	
Irish	106 (55.2%)
Other European Union	10 (5.2%)
Non-European Union	76 (39.6%)
Year of study	
First	42 (21.9%)
Second	36 (18.8%)
Third	48 (25.0%)
Fourth	36 (18.8%)
Fifth	30 (15.6%)
Type of admission	
Direct entry	105 (54.7%)
Five-year BDS	42 (21.9%)
Graduate entry	31 (16.1%)
Mature student	14 (7.3%)
Dentistry first choice of career	
Yes	121 (63.0%)
No	65 (33.9%)
Missing	6 (3.1%)

Table 1. Characteristics of students who responded (n=192).

Primary degree	n (%)
Science/life sciences/biology/biochemistry	31 (49.2%)
Health sciences/biomedical sciences/physiology/kinesiology	20 (31.7%)
Allied health professions	6 (9.5%)
Other	6 (9.5%)

Table 2. Primary degree of student not entering from second-level education (n=63).

compared to 8.5 for other EU and 9 for non-EU students; $p<0.001$). Type of entry (directly from second-level education or not) influenced the ratings of 'I want to be self-employed/own a private dental practice', with students entering directly from second-level education rating this as less important than non-direct entry students (median of 7 compared to 9; $p<0.001$). Year of study influenced the ratings of 'I have the option to seek employment overseas', with first-year students rating this as less important than students in later years (median of 4 for year 1, compared to 7 for year 4, and 8 for years 2,3 and 5; $p=0.016$).

There were no statistically significant differences in median ratings of importance given to any of the factors in-

fluencing choice of dentistry as a career between males and females in the current survey. There were also no statistically significant differences in median ratings of importance given to any of the factors for students for whom dentistry was a first choice or always intended career compared to those who hadn't intended becoming a dentist (excluding the factor 'I always wanted a career in dentistry').

The strongest correlation between ratings of importance was for factors related to employment conditions and remuneration. There was a strong positive correlation between the ratings of importance given to 'Dentistry provides good financial remuneration' and 'Dentistry has more regular hours than other caring professions' ($r_s=0.51$, $p<0.001$) and also between 'Dentistry has more regular hours than other caring professions' and 'I want to be self-employed/own a private dental practice' ($r_s=0.46$, $p<0.001$).

Fifty (26%) of the 192 students who responded provided free text comments on other factors that influenced their choice of dentistry as a career. New motivational factors to emerge from the free text comments related to positive experiences of dental/orthodontic treatment, e.g., "I underwent orthodontic treatment when I was 13 and the results were amazing. It boosted my confidence. I wanted to be able to do the same for others one day," and "Standard of treatment provided by my own dentist".

DISCUSSION

The primary aim of this survey was to identify and rank the motivations why students chose dentistry as a professional career in Ireland during the period identified. Three general classes of motivations may be identified: altruism; working conditions; and, family background in dentistry. Both altruistic motivations and working conditions feature strongly in median ratings, with background featuring to a lesser extent. The primary motivational factor was altruism ('I want to treat and help people or improve their appearance'). Financial security and professional independence were also identified as powerful motivations, with factors including 'I can start to practise dentistry independently after graduation', 'I believe it is easy to find employment', 'I want to be self-employed/own a private dental practice' and 'Dentistry provides good financial remuneration' all rating highly. The least important was 'One or more of my relatives are dentists'.

These motivations are commonly reported throughout the international literature.¹⁻⁵ Unlike other studies,^{9,11} we did not identify any gender differences in motivational factors in our study. In a qualitative study of intrinsic and extrinsic motivations for choosing dentistry by gender, many common motivating factors were identified across genders, i.e., role models, being people oriented and having a strong interest in health sciences.¹² However, gender differences in motivation were found in relation to financial incentives as well as working life and career as a dentist.¹² While we did not observe these differences by gender in our study, these differences were found by type of entry (direct or non-direct) and country of origin. Non-direct entry students (i.e., mature students or graduate entry) were more

likely to rate financial factors higher than direct entry students. Similarly, international students were more likely to rate financial factors higher than Irish students. This may be due to the increased costs associated with mature or international entry students compared to their direct entry counterparts.

There are some notable differences in motivations between the surveys conducted in 2016/17 and 1998/99 in Ireland. The largest change in median rating over time was for students who 'always wanted a career in dentistry' (increasing from a median of 3 in 1998/99 to 6 in 2016/17). This increase may be viewed as positive, given the importance of choice and self-determination as the type of motivation associated with increased self-esteem and deep study strategies.⁷ The least important factor in both the 2016/17 and 1998/99 surveys were 'One or more of my relatives are dentists' (scoring 0 for both 2016/17 and 1998/99) followed by 'advice from a teacher/career advisor/family member' (scoring 5 in 2016/17, 4.5 in 2016/17). This is similar to the findings of Haslach *et al.* in a study of dental students across Europe, where very few students (2.8%) recorded having been motivated by a 'high school or college counsellor'.¹¹

STRENGTHS AND LIMITATIONS

The response rate for the survey was high¹³ and the gender profile of the sample is broadly reflective of the international population of dental students, with females exceeding males.¹¹ This study was, however, only conducted in a single centre. Although there was a very high response rate, the results cannot be generalised to all dental students. Factors such as the academic reputation, cost and

length of the programme were not included in the survey to facilitate comparison with the 1998/99 survey. Differences between the results from the 1998/99 and 2016/17 surveys may also reflect the changes in the dental programme delivered in the university. This survey was conducted before any impact of the Covid-19 pandemic on dental education. A review of the international evidence on the impact of the pandemic highlighted dental students' concerns about financial and economic security, and uncertainty about employment and the stability of the dental profession in the future.¹⁴ Further research is needed to explore whether there are any long-lasting impacts of the pandemic on the motivations of students to choose dentistry in the future.

CONCLUSIONS

Dentistry is a highly desirable career for potential students and therefore extremely competitive to access. The main motivational factors influencing dental students included altruism and working conditions. Positive previous experiences of dentistry and dental professionals emerged as a new motivational factor. Background factors such as previous family involvement with dentistry and/or career advice featured least. Nationality, mode of entry and year of study influenced the motivational factors of the students surveyed.

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Factor	Median rating (first quartile, third quartile) 1998/99 survey	Median rating (first quartile, third quartile) 2016/17 survey
I always wanted a career in dentistry	3 (0, 7)	6 (3, 9)
Because of advice from a teacher/career advisor/family member	4.5 (0, 7)	5 (2, 8)
One or more of my relatives are dentists	0 (0, 1)	0 (0, 4)
I can start to practise dentistry independently after graduation	6 (3, 8)	7 (5, 9)
I believe it is easy for a dentist to find employment	8 (7, 10)	7 (5, 9)
I want to be self-employed/own a private dental practice	8 (5, 10)	8 (5, 10)
Dentistry has more regular hours than other caring professions	8 (7, 10)	8 (7, 10)
Dentistry provides good financial remuneration ²	7 (5, 10)	8 (7, 9)
I want to treat and help people or improve their appearance	7 (5, 9)	9 (7, 10)
I have the option to further my career in postgraduate training ³		8 (6, 9)
I have the option to seek employment overseas ³		8 (5, 9)
I like to work with my hands ³		8 (7, 10)

¹ Missing data for up to 12 responses for some items.

² Asked as 'Dentistry pays better than other job options available to me' in 1998/99.

³ Not asked in 1998/99.

Table 3. Ratings of factors influencing choice of careers (n=192).¹

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