

# Does student debt affect dental students' and dentists' stress levels?

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## In brief

Provides an insight into current levels of student debt among dental students and newly qualified dentists.

Outlines how student debt affects dental students' and dentists' stress levels.

Explores the difference in stress levels of those with low student debt and those with high student debt.

Looks at application numbers to study dentistry since the rise in tuition fees.

**Introduction** Many studies have shown financial worries and debt to induce stress in individuals, this combined with the existing stress of being a dentist raises the question of how student debt affects students' and dentists' stress levels.

**Objectives** Determine whether student debt has had any noticeable effect on student stress levels; investigate whether student debt has any effect on dentists' career choice; investigate whether the increase in tuition fees has influenced the number of applicants to study dentistry at the University of Birmingham. **Method** Anonymous questionnaires were completed by 70 4th year and 38 5th year BDS and 22 Dental Core Trainees (DCTs). Participants circled the response which best fitted their situation regarding statements on their level of stress and future career path. Ethical approval granted. Application figures to study dentistry obtained from head of admissions. **Results** Forty-two percent of males and 63% of females strongly agreed with the statement that having no debt would reduce their stress levels. Of those with debt >£40,000, 11% strongly agreed and 42% agreed that their total amount of student debt causes them stress. Whereas, those whose debt is <£40,000 only 2% strongly agreed and 28% agreed that their total amount of student debt causes them stress. Seventy-seven percent of participants who had parental or family financial support reported this reduced their stress levels. Student debt was found to deter females from undertaking further study more than it deters males ( $P < 0.001$ ). Students with a higher level of debt were more likely to worry about their total student loan(s) ( $P < 0.001$ ). Moreover, students with a higher level of debt were more likely to be stressed about their total student loan(s) ( $P < 0.001$ ). Parental/family contribution to student expenses reduces student stress ( $P < 0.001$ ). Applications to study dentistry since the rise in tuition fees have decreased by 42%. **Conclusion** Student debt has had an impact on student stress; students reporting a higher level of debt also report more stress and concern about paying off their student debt. Having no student debt would reduce stress levels, although to what extent is undetermined. Applications to study dentistry have fallen since the increase in tuition fees.

## Introduction

Student debt is a contentious issue in Great Britain. Stress among dental students can come from a variety of sources, such as: examinations, accommodation-related issues,

family responsibilities and financial worries to name a few.

Debt can significantly increase stress levels, which may affect academic performance and quality of life. Amongst others, studies by C. Fitch and the Associated Press-America Online have shown that individuals dealing with significant debt are more likely to report health problems such as headaches, increased blood pressure, gastro-intestinal ulcers, depression and anxiety.<sup>1,2</sup> It cannot be concluded that all these symptoms are the direct result of financial stress, however, they are representative of chronic stress.<sup>1</sup>

In England, prior to 2012, university tuition fees were £3,290 a year, in 2012 they rose to £9,000 a year for dental students.<sup>3</sup> However, there is conflicting evidence regarding whether the size of the debt matters; in a systematic review the majority of studies found a link between a higher level of debt and a higher level of stress, anxiety and depression. Students' estimates of future debt were also found to produce higher amounts of stress, impacting on anxiety and depression.<sup>2</sup>

A British Dental Association (BDA) survey carried out in 2013 of final year UK dental undergraduates, discovered their average

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total debt to be £24,734. With the authors predicting that by 2018/19 the total debt of a graduate from an English dental school is likely to surpass £60,000.<sup>3</sup> The BDA also found that 94% of the undergraduate dental students completed their degrees with some debt. Many students reported struggling to meet living and study costs, with almost all students who had experienced financial difficulties suggesting it had caused them stress and worry.<sup>3</sup>

Even with student loans, grants and bursaries some students still report being short of money, sometimes subsequently having to take out bank loans, seek part-time employment and borrow from relatives.<sup>3</sup> This can lead to more stress resulting from time pressures from part-time jobs and asking family members for money. Dental students may also be found to be disproportionately affected by debt than other university students as they have more timetabled hours than the majority of courses, shorter holidays (less opportunity for part-time and summer jobs), as well as lasting five years in duration compared to a typical three year course.<sup>4</sup>

Student debt can also be a determining factor in dentists' career decisions after they graduate. Dentists with higher initial debt are less likely to specialise and more likely to enter private practice with higher remuneration than a public health or faculty position and

work longer hours.<sup>5</sup> The effect of debt on future career decisions, however, was found to be small compared with the effects of sex and race.<sup>5</sup> Debt payback times were found to be increasing, however, dentists' earnings appear to be stagnating;<sup>5</sup> this has the potential to increase stress levels on future generations of dentists as they will spend longer paying off the debt.

The issue of student debt can impact on both university students and prospective university students. In a paper by the Institute for the Study of Labour – Germany (IZA) in collaboration with Kings College London (KCL) it broadly found that applications decrease in response to higher fees, especially for courses with lower salaries and lower employment rates. It states that the increase in tuition fees in England in 2012 reduced applications to university by 25 log points; this equates to a 1.6% reduction for every £1,000 increase in fees.<sup>6</sup>

## Objectives

- Determine whether student debt has any noticeable effect on student stress levels
- Investigate whether student debt has any effect on dentists' career choices
- Investigate whether the increase in tuition fees has influenced the number of applicants to study dentistry at the University of Birmingham.

## Methodology

An anonymous questionnaire was completed by 4th and 5th year BDS and DCT 1, 2, 3. (DCTs or Dental Core Trainees are salaried junior hospital dentists, most having graduated within the last four years). The questionnaire consisted of circling the response which best fitted the participant's answer and a 'Likert scale' to assess the participant's response to a series of questions regarding their level of stress and future career path.

Applications to study dentistry at the University of Birmingham were obtained from the head of admissions. The data collected were analysed in Excel and a statistician calculated the statistical significance of the results.

## Results

After gathering the data, the results were split into three main categories: gender, year group and student debt (Tables 1, 2, and 3 respectively).

Table 1 shows a large proportion of the participants experience some stress as a result of their student debt; with 40% of male and 44% of female respondents agreeing/strongly agreeing that their total student loan causes them stress. However, one significant difference between gender is that 37% of male compared with 61% of female respondents agreed/strongly agreed

**Table 1** This table shows the percentage of male and female responses to each statement

Statement	Gender	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
Costs of university have been much higher than I expected	Male	21	52	13	8	6
	Female	33	25	23	17	2
Before I started at university I had little knowledge of its cost	Male	6	35	23	25	10
	Female	23	23	20	29	5
My total student loan(s) does not cause me to worry	Male	4	31	25	40	0
	Female	2	31	16	34	17
My total amount of student loan(s) causes me stress	Male	4	35	27	27	6
	Female	10	34	24	28	5
I would participate in voluntary work if I did not have to have paid employment	Male	10	40	19	16	15
	Female	16	37	33	13	1
Student debt will deter me from undertaking further study	Male	8	29	15	29	19
	Female	16	45	20	17	2
I am not worried about paying off my student debt	Male	4	31	29	29	6
	Female	8	33	20	23	16
Having no student debt would reduce my stress	Male	42	38	16	4	0
	Female	63	20	6	10	1

that student debt would deter them from undertaking further study; this was found to be highly significant ( $P < 0.001$ ).

Males were more likely to underestimate the cost of university with 73% agreeing/strongly agreeing that costs have been much higher than

they expected, compared to 58% of females. Both genders decisively agreed that having no student debt would reduce their stress levels, with 80% of males and 83% of females agreeing/strongly agreeing that; having no student debt would reduce their stress levels.

The introduction of £9,000 a year to study dentistry in 2012 means the majority of BDS4 have significantly more debt than BDS5 who paid the previous rate of £3,290. The self-reported mean level of debt for BDS4 is £41,000-50,000; whereas for both BDS5 and DCTs it is

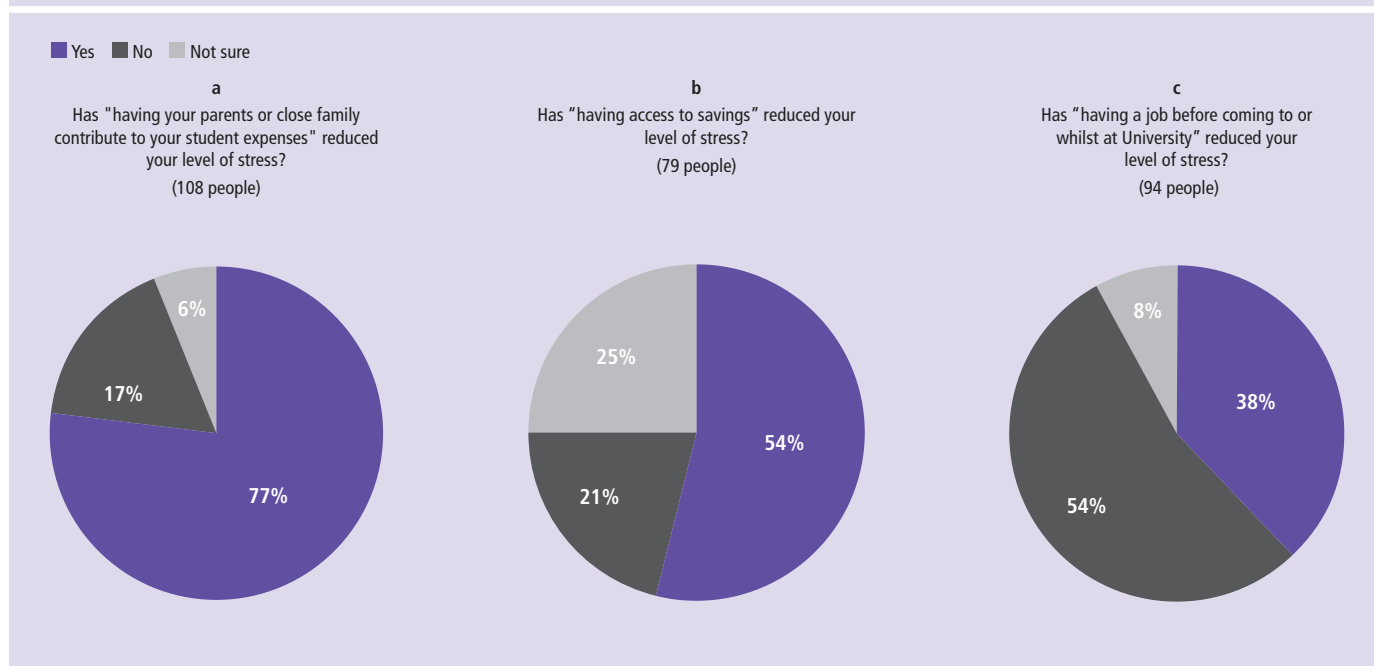
**Table 2** This table shows the percentage of BDS4, BDS5 and DCT responses to each question

Statement		Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
My total student loan(s) does not cause me to worry	BDS4	0	24	17	41	17
	BDS5	3	37	24	34	3
	DCT	14	45	18	23	0
My total amount of student loan(s) causes me stress	BDS4	9	41	30	20	3
	BDS5	5	32	29	29	5
	DCT	0	27	9	50	14
Student debt will deter me from undertaking further study	BDS4	16	40	14	21	9
	BDS5	11	45	24	18	3
	DCT	9	27	18	27	18
I am not worried about paying off my student debt	BDS4	3	30	20	31	16
	BDS5	3	39	32	21	5
	DCT	27	27	23	13	9
Having no student debt would reduce my stress	BDS4	40	23	12	7	0
	BDS5	58	32	5	5	0
	DCT	40	32	14	9	5

**Table 3** This table shows the percentage of responses of students with a total debt of less than £40,000 (66 participants) and those with a total debt greater than £40,000 (64 participants)

Statement		Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
Costs of university have been much higher than I expected	<£40,000	18	36	21	20	5
	>£40,000	39	34	19	8	0
My total student loan(s) does not cause me to worry	<£40,000	3	42	23	30	2
	>£40,000	3	22	14	42	19
My total amount of student loan(s) causes me stress	<£40,000	2	28	23	41	6
	>£40,000	11	42	28	16	3
I would participate in voluntary work if I did not have to have paid employment	<£40,000	21	38	21	14	6
	>£40,000	8	39	33	15	5
Student debt will deter me from undertaking further study	<£40,000	11	36	21	21	11
	>£40,000	16	44	13	23	4
I am not worried about paying off my student debt	<£40,000	12	30	29	21	8
	>£40,000	3	34	19	30	14
Having no student debt would reduce my stress	<£40,000	48	29	12	9	2
	>£40,000	61	25	8	6	0

**Fig. 1** Participants' responses relating to reduction in stress



£21,000-£30,000. The disparity of up to £30,000 is likely to have led to the increased level of worry amongst BDS4 students. As can be seen in Table 2, BDS4 were the group most likely to stress over their student debt with 50% agreeing/strongly agreeing that their total student debt causes them stress, compared with 37% of BDS5. Fifty-nine percent of BDS4 disagreed/strongly disagreed with the statement that 'their total student loan does not cause them to worry', compared with only 36% of BDS5.

The difference in total level of debt between BDS4 and BDS5 was found to be highly significant ( $P < 0.001$ ), demonstrating the rise in tuition fees in 2012 has had a profound effect on the debt levels of dental students. BDS4 were most likely to worry about their total student loan followed by BDS5 then DCTs; this difference between BDS4 and DCTs was highly significant ( $P < 0.001$ ). BDS4 strongly agreed/agreed the most that their total amount of student loan causes them stress with a higher proportion of BDS5 and DCTs disagreeing; this was highly significant ( $P < 0.001$ ). BDS4 were the most worried about paying off their student debt with DCTs the least worried ( $P < 0.05$ ) and BDS4 were the least likely to participate in voluntary work with BDS5 the most likely ( $P < 0.05$ ).

From the data in Table 3 the following statements can be made: students with higher levels of debt were more likely to be stressed about their total student loan(s) ( $P < 0.001$ ). Students with higher levels of debt were more likely to worry

about their total student loan(s) ( $P < 0.001$ ). And students with a higher level of debt are also less likely to participate in voluntary work ( $P < 0.05$ )

To the statement 'having no student debt would reduce my level of stress' 61% of those with debt  $>£40,000$  strongly agreed with it, in contrast to 48% of those with debt  $<£40,000$ . The study also showed that BDS4 were significantly more worried about paying off their student debt than DCTs ( $P < 0.05$ ).

Figure 1a shows the participants' responses to the question, 'has having your parents or close family help you financially reduced your level of stress?' Seventy-seven percent said parental/family support has helped to reduce their level of stress. This was found to be highly significant ( $P < 0.001$ ).

Figure 1b shows the participants' responses to the question, 'has having access to savings reduced your level of stress?' Fifty-four percent said access to savings had reduced their level of stress. Those who have access to savings are less likely to worry about their total student loans ( $P < 0.001$ ).

Figure 1c shows the participants' responses to the question, 'has having a job before coming to or whilst at university reduced your level of stress?' Only 38% agreed with this statement, with the majority suggesting it had not decreased their level of stress.

The study also revealed that participants who attended a private school had less debt than those who attended a state comprehensive ( $P < 0.01$ ).

Figure 2 shows that just over half of participants (54%) think it will take 13 years or more to pay off all their student loans; this suggests the effects of student debt will be long lasting and could continue to have an effect on dentists throughout their early practising career. When a comparison is made between BDS4 and BDS5 on how long they estimate it will take to repay their student loans, on average BDS4 thought it would take longer, this is indicative of the higher average debt of the BDS4 cohort.

As can be seen in Figure 3, applications to study dentistry at the University of Birmingham have fallen by 42% since the rise in tuition fees. Apart from 2012 the applications to study dentistry are all below the 2011 level when fees were nearly two thirds lower.

### Overview of participants

There were 134 questionnaires distributed with four rejected due to them being incorrect or incomplete. Of the 130 questionnaires accepted, 48 respondents were male and 82 were female, with 70 respondents from BDS4, 38 from BDS5 and 22 DCTs. There were 66 participants with a debt of less than £40,000 and 64 participants with a debt greater than £41,000 (This reflects the fact that more fourth years completed the survey than fifth years and DCTs). Regarding the respondents' schooling; 54 had attended a state school, 35 a grammar school and 30 a private school, with 11 having attended a combination of the above schools.

## Discussion

The rationale behind selecting BDS4, BDS5 and DCT students was because they have already accumulated a substantial amount of debt, and can therefore respond to the questions with more sincerity as they do not have to estimate the debt they may have in years to come. An estimation by junior years may make their answers less reliable. DCTs were included as they have already had a minimum of one year earning a salary, with the intention being to determine whether earning a salary has affected their levels of stress or career aspirations.

This study has shown that debt has a statistically significant impact on student stress levels, with higher debt correlating to a higher stress level regardless of gender or year group. Having no student debt was also found to reduce stress levels, although to what extent is undetermined.

Dentists and dental students who attended a private school reported to have less debt than those who attended a state grammar or comprehensive. Therefore, attending a private school may suggest that the participant's parents/family are in a position to contribute more to student expenses, hence reducing their level of debt (and stress).

Despite DCTs and BDS5 graduating with approximately the same level of debt, BDS5 reported to be more stressed than the DCTs; this could suggest that earning money helps to relieve the stress of student debt.

Students with a higher level of debt were found to be less likely to participate in voluntary work. A study by Nicholson *et al.*<sup>5</sup> identified that dental students with higher levels of debt were less likely to specialise and more likely to enter into private practice. This suggests that in the future the number of specialists and NHS dentists could decline as dentists seek jobs in the private sector with higher remuneration to help them repay their student loans. This study also showed that women reported to be more deterred by student debt than men from undertaking further study.

Debt aside, dentistry has been found to be a stressful profession, with studies from all around the world, including the United States, Denmark, Thailand and the UK verifying this.<sup>7</sup> Factors reported to be stress inducing include; running a business, changes to the NHS, the NHS payment system and managing stressful patients.<sup>7</sup> In a study by Hill *et al.*,<sup>7</sup> depression/psychological illness (stress or anxiety) was found to be the

Fig. 2 Estimated number of years to re-pay student loans

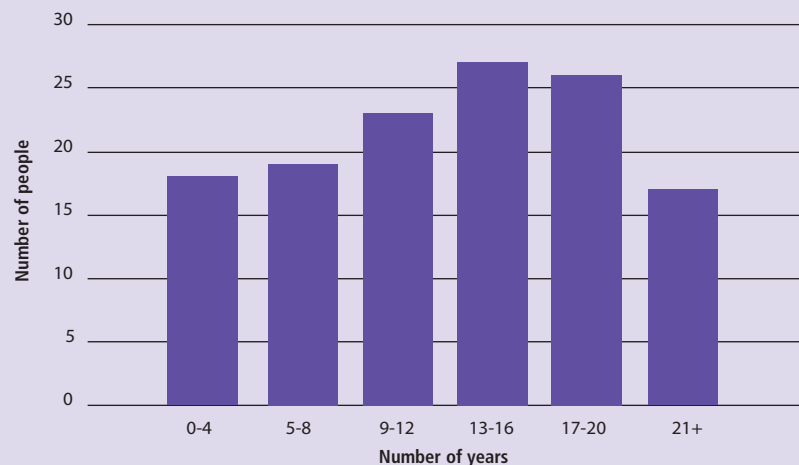
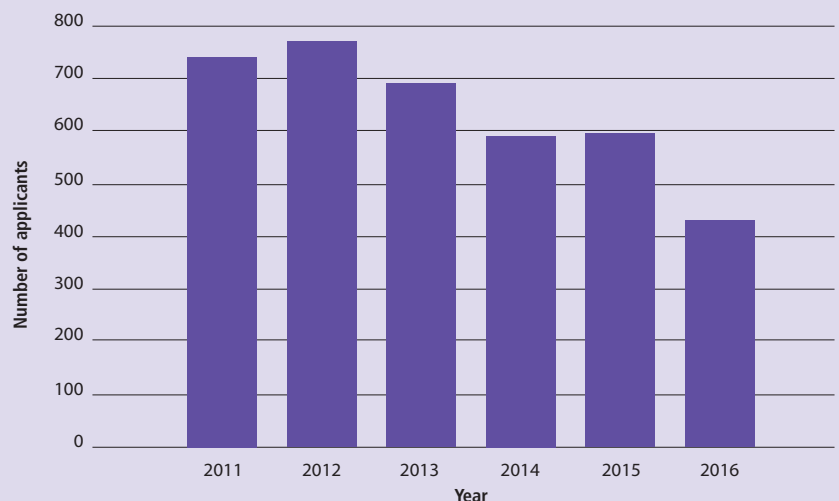


Fig. 3 Total number of applicants to study dentistry at the University of Birmingham



single biggest reason for premature retirement. With student debt on the rise,<sup>8</sup> this is likely to add to the increased level of stress dentists face throughout their career, potentially leading to greater levels of ill health retirement.

Despite a net increase in the total number of students to attend university since the 2012 rise in tuition fees,<sup>9</sup> the number of applications to study dentistry has decreased dramatically year on year, with a 42% decrease in applications to study dentistry compared with the lower tuition fees in 2011. It is likely the increased cost and, therefore, student debt has played a part in this reduction, however, it is the authors' opinion that the proposed changes to the NHS dental contract and a decrease in earning potential of dentists has led to people choosing to study other courses. In the future,

it will be interesting to see if the numbers stabilise or continue to fall.

## Conclusion

Student debt has affected student stress levels, with individuals who possess a greater debt identifying greater levels of stress and concern regarding paying off their student debt. Moreover, having no student debt would reduce stress levels. Gender was found to be non-significant on the whole with the only exception being that student debt was found to be more likely to deter females from undertaking further studies than males. Parental/family financial support and having access to savings were both found to significantly decrease student stress, however, having a job before or during university did not.

Applications to study dentistry have decreased since the rise in tuition fees. This suggests that increasing debt has deterred people from choosing to study dentistry; however, to what extent is difficult to determine.

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