ADA CE Program ARTICLE 1

COVER STORY

The effect of education debt on dentists' career decisions

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ABSTRACT

Background. The purpose of the study was to determine whether there is an association between the amount of education debt on completing dental school (initial debt) and certain career decisions.

Methods. The authors surveyed 1,842 practicing dentists who completed dental school between 1996 and 2011 to ascertain their initial education debt, the balance on their debt in 2013, and a variety of specialization and practice decisions made during their careers. Data also included demographic characteristics and parental income and education levels.

Results. Dentists with higher initial debt were less likely to specialize and more likely to enter private practice, accept high-paying jobs on graduation, and work longer hours. Choice of employment setting, practice ownership, and whether to provide Medicaid and charity care were associated with dentists' sexes and races but not debt.

Conclusions. High debt levels influenced some career decisions, but the magnitude of these effects was small compared with the effects of demographic characteristics, including race and sex, on career choices.

Practical Implications. Policy makers concerned about the influence of student debt on the professional decisions of dental school graduates should recognize that students' demographic characteristics may be more powerful in driving career choices.

Key Words. Dental education; career choice; dentistry.
JADA 2015:146(11):800-807
http://dx.doi.org/10.1016/j.adaj.2015.05.015

Rising education debt and the accompanying pressure to repay it raises concerns that debt may affect important career decisions such as whether to seek advanced training within a profession, whether to select a high-paying position within a profession, what types of patients to serve, how much to work, and when to retire.

Students in the United States collectively held $966 billion in student loan debt in 2012, almost 3 times as much in real terms as in 2004.[1] Debt levels were particularly high among graduates of professional schools. For example, the education debt balances among students graduating in 2011 from dental, medical, and law schools were $203,000, $162,000, and $125,000, respectively.[2-4]

If incomes grow at the same rate as debt, then younger professionals will be able to pay off their debt and still maintain the same standard of living as their predecessors. There is evidence, however, that debt-to-income levels are rising in high-income professions. In dentistry, for example, the average education debt held

This article has an accompanying online continuing education activity available at: http://jada.ada.org/ce/home.

by students graduating in 1996 was 70% of the contemporaneous median income in the profession, versus 103% for 2011 graduates. For veterinarians, the debt-to-income ratio increased from 118% in 1998 to 163% in 2010.[5] Given the rising level of student indebtedness, understanding the association between the amount of education debt on completing dental school (initial debt) and such career decisions as whether to specialize and where to practice could yield useful information to guide policy makers and others invested in helping to shape the future dental workforce.

REVIEW OF THE LITERATURE

According to standard economic models, education debt should have a small effect on career choices unless debt becomes large relative to expected lifetime earnings. Studies in which the investigators examined the association of education debt and career choices provide mixed support for the standard life-cycle model, which asserts that people make sequential decisions about allocating time, effort, and money to maintain economic stability over their lifetimes.[6] Minicozzi[7] reports a positive, statistically significant relationship between a male student's education debt and the probability he will pursue a high-paying job with low prospects for short-term wage growth. Investigators in several other studies concluded that lower education debt or the absence of tuition loans was associated positively with a college or law school student's likelihood of pursuing a lower-paying occupation on completing education.[8-10] In contrast, Zhang[11] found no association between education debt and career choices and only a small negative association between education debt and the decision to pursue graduate training.

Likewise, there are no clear conclusions from studies that focus on the association between education debt and career decisions in health occupations. Results from earlier studies showed no relationship between indebtedness and the choice of a medical specialty.[12] Investigators in more recent studies, however, found that education debt was associated with medical career choices and that the magnitude of the effect depended on individual characteristics.[13,14] Rosenblatt and Andrilla[15] found that women and minority groups with substantial debt were more interested in pursuing primary care or obtaining an inner-city practice, respectively. On the other hand, students from middle-income families were less likely to pursue primary care careers, suggesting that such students are sensitive to debt when making career choices.[16] Investigators in some studies found that high levels of debt were associated with medical students' choosing to pursue nonprimary care specialties that require longer training periods but offer higher salaries,[14,17,18] whereas investigators in another study found that high levels of debt were associated with medical students' choices to pursue primary care specialties that offer lower incomes but allow one to start repaying loans sooner.[19] Finally, investigators in some studies found that education debt was associated with medical students' short-term decisions but not their long-term decisions.[20,21]

METHODS

In February 2013, we attempted to contact the 17,734 students who graduated from US dental schools in 1996, 2001, 2006, and 2011. We targeted members of these cohorts to examine the effect of debt on dental career choices during a period of rising student indebtedness and to observe changes in the ability of students to reduce their debt burden over time. Gathering data from several cohorts provided us with a wider range of indebtedness to consider as we looked for correlations between the amount of education debt held at the time of graduation from dental school and dentists' career choices after graduation. The American Dental Association's institutional review board reviewed and deemed the survey exempt from the Health and Human Services Policy for the Protection of Human Subjects (see Section 45 CFR 46.101 (b) (2)).[22] Participants implied consent by completing the survey and submitting their responses.

A total of 1,842 dentists completed the survey for an overall response rate of 10.4%. The low response rate was partly because a current valid phone number was not available for 7,088 of the dentists and not all dentists with a valid phone number were contacted successfully. Of those contacted by phone (n = 649), 84% agreed to complete the survey. The highest response rate came from the class of 2011. This cohort was easiest to reach because the American Dental Association database contained more e-mail addresses for this class than for the other 3.

One objective in designing the survey was to examine the trajectory of education debt over dentists' careers and the effect of debt on career decisions. The survey asked respondents about their total education debt on completion of dental school (including from college), current balance on education debt, current practice situation, annual income, practice ownership, average number of hours worked weekly, number of weeks worked per year, patient characteristics, and attitudes toward debt, among other information.

We examined 5 career choices in our analysis:

- pursuing advanced or specialized training (that is, endodontics, oral and maxillofacial surgery, orthodontics, or periodontics; General Practice Residency and Advanced Education in General Dentistry residencies did not qualify as specialization);
- entering private practice, or accepting a position with a government organization (for example, the armed