

A Comparative Study of Professional Student Stress

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Abstract: A study was conducted involving a group of 290 medical and dental students to directly compare perceived stress levels encountered during their education. A modified questionnaire based on Garbee et al.'s Dental Environmental Stress survey was provided to the students by either email or paper. The purpose of the investigation was to determine if the sources of stress reported by medical and dental students, both male and female, were due to common factors. A multivariate statistical analysis was also conducted to measure stress differences by year in school. Through factor analysis, the survey question responses were grouped into five causal categories: academic performance, faculty relations, patient and clinic responsibilities, personal life issues, and professional identity. The overall findings show that dental students had greater levels of stress than medical students in three of the five categories. The only category in which medical students demonstrated greater stress levels than dental students was in professional identity. Measures of comparative levels of stress between male and female students for either profession did not demonstrate any significant differences. Stress levels related to clinical work varied significantly between the type of professional student and his or her year in school.

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Research studies measuring stress experienced in professional training by medical and dental students have been frequently reported in the academic health professions literature over the past twenty-five years. A couple of comparative stress studies published in peer-reviewed journals have reported composite findings of medical and dental students, along with students in other health care professions such as pharmacy and nursing.^{1,2} The majority of studies on this topic have focused on either medical or dental student stress related to professional and academic life. Among these studies, various combinations of quantitative and qualitative methodologies were used that may not have measured the effects of these stressors in a consistent way. A review of the available literature reveals that there have been no published reports directly comparing medical and dental student stress as a focused inquiry using a common survey instrument or theoretical framework. This study highlights differences in the potential stressors affecting each of these groups. This is important because applicants to health care professions schools are sometimes undecided as to

their specific direction. Also, it is not unusual for these groups to be taught concurrently in biomedical science courses, and educators should be aware of these differences in order to best respond to the psychosocial needs of their students.

Perhaps the most challenging aspect of conducting this type of analysis is the absence of a common set of metrics to consistently measure stressors for each group. Stress studies involving dental students over the past twenty-five years have often used modified versions of the Dental Environmental Stress questionnaire (DES) developed by Garbee et al. in 1980.³ This survey instrument contains thirty-eight questions to determine potential sources of stress for dental students. The questions are classified into six stress causal categories: academic performance, faculty relations, patient and clinic responsibilities, personal life issues, professional identity, and financial obligations. Since the introduction of this instrument, the DES has been translated into several languages and adapted to various cultural practices for North American and international studies of dental undergraduates.⁴⁻⁷

Stress studies in medical education conducted between 1980 and 2005 used a wide variety of survey instruments. Very few medical school studies used the same survey instruments more than once. Conversely, a significant number of dental studies have used the DES successfully. The DES has developed a reputation as a reliable and valid measurement tool as a result of its flexible design and consistent findings reported in independent investigations.

The primary purpose of our study was to compare perceived stress levels between medical and dental students, determine if the sources of stress reported by the two groups of students were due to common factors, and explore strategies for relieving the highest professional student stressors. Secondary research questions include whether certain stressors affect one type of student more than another (e.g., male or female, first-year or fourth-year). Interest in pursuing this study arose from a group of educators in academic medicine and dentistry wanting to develop collaborative programs with shared resources to address health professions education stress in a broader, more efficient way. To collect data, the investigators decided to use a modified version of the DES to directly compare and contrast the types of stress encountered by male and female medical and dental students in each class of the four-year curriculum.

Literature Review

For most of the past hundred years, the pedagogical focus of health professions training has encouraged the development of clinical behaviors expressing impersonal objectivity in managing patients. In recent decades, however, course workload requirements and the teaching of clinical decorum have slowly taken a more humanistic approach.⁸ Despite these curricular changes, the evidence of stress studies in the health professions education literature suggests that the education of medical and dental students has taken a toll on their physical and psychological health.

The Garbee et al. survey³ recognized six categories of potential stressors for dental students. For the purpose of our comparison study of medical and dental students, the six categories were consolidated into five: academic performance, faculty relations, patient and clinic responsibilities, personal life issues, and professional identity.

Academic Performance As a Potential Stressor

In the dental literature, several factors have been linked to stress experienced as a response to students' efforts to meet academic performance requirements in dental school. The two most frequently cited are grade competition and heavy workload. Competition to receive good grades for freshman and sophomore students is generally focused on the completion of preclinical laboratory projects in addition to successful performance in demanding basic science courses. Junior and senior students, on the other hand, generally experience stress related to difficulties in meeting procedural clinical requirements.^{1,4,8-10} Long hours and heavy workload were also noted in several studies as contributing to a stressful learning environment.^{3,4,6-12} Heavy workload pressures result in a fear of failure due to concerns about falling behind in course requirements.^{7,9,12} Sanders and Lushington⁶ found that students with higher levels of stress related to their relationships with faculty members tended to have lower grades in tests of clinical competence and basic understanding.

Studies of medical students have reported competitive pressures to achieve good grades in didactic examinations and clinical practice evaluations.^{13,14} Other studies noted heavy workload and long hours during professional training as highly stressful experiences.¹⁵⁻¹⁷

Student Relationships with Faculty As a Potential Stressor

Dental students reported high levels of stress due to inconsistent feedback from faculty and perceptions of receiving unjustified criticism on preclinical and clinical exercises.^{4,6,9} Medical students reported that they found few faculty members who were willing to serve as mentors.¹³ Medical faculty members appeared to be generally unaware of the high levels of stress their students were facing and did not recognize signs of student burnout.¹⁸ Hayes et al.¹⁹ suggested that medical schools promote a culture of intimidation for students who do not comply with expected behavioral norms. Holm and Aspergen²⁰ reported that medical students who utilized both scientific and humanistic techniques were often criticized as not being as professionally competent as their colleagues who relied exclusively on an impersonal, scientific approach to managing patients.

Patient and Clinical Responsibilities As a Potential Stressor

Pau and Croucher²¹ conducted a study of British dental students that measured their emotional intelligence quotient. Students with low emotional intelligence scores perceived more stress when dealing with patients in their training clinics. Incidental to the primary focus of their research on emotional intelligence, these researchers found that third- and fourth-year students had higher levels of stress than preclinical students in their first or second year of training.

The effects of chronic stress in medical school training have been reported as contributing to a feeling of depersonalization in medical students' relationships with their patients. Students complain about their inability to empathize with their patients' anxiety in coping with their illnesses.^{16,18,20} Spencer¹⁶ concluded that the often-reported decline in medical empathy among medical students is due to transient social relationships, hurried and fragmented relationships with patients, and avoidance of intimacy during medical training.

Personal Life Issues As a Potential Stressor

Researchers in both dental and medical education have reported student frustration with the lack of social support from their schools or an inadequate amount of time for rest and relaxation.^{4,14,17,22,23} Acharya¹² reported that Indian dental students were often stressed by the fear of facing their parents after failing academically. Mounting financial responsibilities were also found to be a significant source of stress for both student groups.^{4,14} Stewart et al.²³ noted that the loss of opportunities for social and recreational activities contributed to higher stress levels, less overall academic success, and more symptoms of depression in second-year medical students.

Questions in the DES have measured the effects of stress in dental school education on peer relationships, but none of the studies to this point have reported that dental education has a deleterious effect on peer interactions. Hayes et al.¹⁹ reported that medical school training does have a negative effect on the ability of some class members to fit in with their colleagues.

Professional Identity As a Potential Stressor

Both medical and dental students appear to face challenges during their professional training in developing and maintaining a sense of confidence in their ability to be effective clinicians. Very often, these challenges have been found to be affected by gender and are also linked to an imperative for students to exhibit perfection in all aspects of their behavior and clinical skills.^{2,24-26}

In three dental school studies, female dental students had significantly higher stress levels than males.^{4,7,9} Burk and Bender⁹ found that dental students reported their stress was related to personal disappointments over their academic performance. To cope with stress caused by their perceptions of inadequate performance, students sought support from upperclassmen, their peers, and faculty members in their preclinical and clinical courses. Female dental students were reported to be more likely to experience emotional problems related to stress. Polychronopoulou and Divaris⁷ also reported that females felt much more stressed about the difficulty of their coursework and their fear of failing. Westerman et al.⁴ found stress scores to be generally higher among females than males in several measurement categories of the DES.

Both dental and medical students also suffered stress due to a perceived lack of competence in being able to treat patients. Upperclassmen in dental school demonstrated stress related to insecurity about professional failure.^{7,21} Henning et al.² suggested that medical and dental students' pursuit of perfection led them to feel like imposters if they had difficulties adjusting to the rigors of professional life. Dahlin et al.¹⁵ reported that third- and sixth-year students in Swedish medical schools suffered significant stress from a lack of confidence in their personal ability to endure long hours and perform clinical duties competently. Several stress factors were associated with depression. The incidence of depression symptoms reported by medical students was felt to be greater than that found in the general population.¹⁵ This study also found that female medical students reported higher levels of stress than males and that the types of stressors having the greatest impact on students' well-being changed as they progressed from preclinical to clinical training. Radcliffe and Lester¹³ reported that developing a professional demeanor was felt by medical students to be one of

the most demanding aspects of their training. These investigators reported that transition periods, such as graduating from preclinical to clinical training, were considered the most stressful times in their professional education.

Rosenfield and Jones²⁷ suggested that too much emphasis is placed on scientific objectivity and detachment in medical training. Knowing when to talk, act, listen, or tolerate a patient's distress is part of the art form of medicine. An unfortunate side effect of medical training noted by these authors is that it produces physicians who believe that self-denial is valuable and necessary and that living under stress is normal.

Research has also found that the faculty affects a student's sense of self-efficacy through social influence and group normative behaviors. Wilkes and Raven²⁸ define social influence as "a change in the attitude, belief, or behavior of a target resulting from the actions of another person or group of persons" (p. 481). Student trainees are often considered the lowest members of the power hierarchy, which makes them more susceptible to social influences. Because students are uncertain of their competence, afraid of a poor evaluation, or want to please a superior, these feelings may have a profound effect on their ability to learn and to adopt a professional demeanor. Wilkes and Raven also argue that medical students' professional identity stressors are caused by poor relationships with faculty members, who may not always set a good example for professional behavior. Lack of proper professional demeanor includes behaviors such as cynicism, disrespect, and disdain for patients and support staff. Some medical students wishing to establish a favorable relationship with their faculty preceptors may emulate these behaviors. A faculty member's professional style may be reflective of his or her own sense of security and confidence in his or her own competence. Teaching styles that either nurture or mentally abuse trainees may be reflective of a faculty member's own psychosocial needs. In addition to the effect of faculty, Wilkes and Raven found that such factors as call schedules, sleep deprivation, mood changes, lack of proper nutrition, lack of "quality" time with family and friends, and worry over managing financial debt may also contribute to medical student stress.

The purpose of our study was to compare perceived stress levels between male and female medical and dental students in each of their four years of training. Because of the added stringent and precise

technical requirements of dentistry, it was hypothesized that dental students' overall perceived stress would be greater than that of medical students.

Methods

Survey data were collected from all four classes of one medical school and one dental school, both located on an urban university campus in a large city located in the northeastern part of the United States. Prior to their administration, the questionnaire and research methodology were reviewed and approved by the Institutional Review Board (IRB) on the main university campus.

A modified version of the Dental Environmental Stress questionnaire, compiled by Westerman et al. in 1993,⁴ was used as the original template for our survey. Westerman et al. had made revisions to Garbee et al.'s original 1980 format to make the survey suitable to their investigative design. For the research design of our study, the questions were revised so that they applied to the clinical and didactic aspects of both medical and dental school training. To accomplish this task, questions that pertained to dental training and dentistry were changed to reflect a neutral health care setting. The essential purpose of the question remained intact. The questions were then jointly reviewed by dental and medical school administrators to establish their face validity as predictors of professional school stress.

The survey was reduced to thirty-four questions from the thirty-eight questions in Westerman et al.'s version of the DES instrument. The four questions that were eliminated were reviewed carefully and considered redundant by the authors. An additional three questions were added to determine the demographic variables of gender, year in school, and type of professional training. The thirty-four Westerman et al. questions, which asked respondents to indicate the level of stress associated with each item, were presented in a multiple-choice format with responses as follows: 0=not pertinent, 1=not stressful, 2=slightly stressful, 3=moderately stressful, and 4=very stressful. All questions addressed causal factors of stress as perceived by the student while attending professional school (Table 1).

For the purposes of establishing a theoretical framework for the investigation of the research questions, the survey questions were organized into five clusters of stress causal factors: academic

Table 1. Professional student environmental stress survey: potential stressors and assigned stressor categories

Students were asked to “rate the following as potential causes of stress.”

Question #	Potential Stressors	Stressor Category
1	Amount of assigned coursework	Academic Performance
3	Difficulty of the coursework	Academic Performance
5	Competition with classmates	Academic Performance
7	Examinations and grades	Academic Performance
15	Amount of cheating in professional school	Academic Performance
19	Completing graduation requirements	Academic Performance
23	Fear of failing a course, a scholastic year, or a licensing exam	Academic Performance
26	Lack of time to do assigned schoolwork	Academic Performance
34	Fear of being unable to keep up with workload	Academic Performance
2	Patients' inability to complete the prescribed care plan	Patient and Clinic Responsibilities
4	Responsibilities for comprehensive patient care	Patient and Clinic Responsibilities
6	Patients not available at prescribed times for treatment or examination	Patient and Clinic Responsibilities
8	Difficulty in learning clinical procedures	Patient and Clinic Responsibilities
12	Difficulty in learning precision manual skills required in clinical and laboratory work	Patient and Clinic Responsibilities
17	Working on patients with poor personal hygiene	Patient and Clinic Responsibilities
9	Learning environment created by faculty	Faculty Relations
11	Receiving criticism about work	Faculty Relations
16	Rules and regulations of the school	Faculty Relations
30	Attitudes of faculty toward professional students	Faculty Relations
33	Inconsistency of feedback on your work among different instructors	Faculty Relations
10	Relationships with other members of the class	Personal Life Issues
14	Lack of time for relaxation	Personal Life Issues
18	Lack of home atmosphere in living quarters	Personal Life Issues
20	Having children at home	Personal Life Issues
21	Marital/relationship adjustment problems	Personal Life Issues
25	Financial responsibilities	Personal Life Issues
28	Forced postponement of marriage, engagement, or having children	Personal Life Issues
29	Personal physical health	Personal Life Issues
31	Discrimination due to race, class status, ethnic group, or sexual orientation	Personal Life Issues
32	Having a dual role of spouse/parent/partner and student/professional	Personal Life Issues
13	Lack of confidence to be a successful professional student	Professional Identity
22	Your expectations of professional school versus reality	Professional Identity
24	Insecurity concerning your professional future	Professional Identity
27	Lack of confidence in career decision	Professional Identity

performance, patient and clinic responsibilities, faculty relations, personal life issues, and professional identity (see Table 1). The question clusters were initially chosen on a face validity assessment by faculty experts. Later, these clusters were quantitatively validated by factor analysis. Suggested titles for these cluster groupings arose from a review of previous models of the DES instrument and cumulative patterns in the findings indicated in the literature review

of the past twenty-five years.^{3,4} Responses within the five question clusters served as dependent variable measures in this study.

The research team considered different methods of presenting the survey instrument. Since the faculties in both schools use Internet-based software to provide instructional assignments and reading materials to students, it was decided to place the survey instrument on a Blackboard website accessible

through the university's intranet. Students from both schools were enrolled in a dummy "course" called the Professional Student Environmental Stress Questionnaire. Approximately 500 dental and 750 medical students were enrolled for the "course." The site provided an overview letter describing the purpose of the survey and general instructions for completing it. The deans of academic affairs for the two schools sent an email announcement to their respective students inviting them to participate. The survey was electronically designed so that the respondent could only complete one online entry through the Blackboard account per email address. Responses were anonymous and confidential, and students were not compensated for participating.

The surveys were sent in the middle of the fall 2005 semester. Periodic reminders were either sent electronically or announced at class meetings throughout the 2005–06 academic year. The survey was closed at the end of the academic year. The "survey manager" feature of the Blackboard software was used to create an Excel spreadsheet of the results. Results were collated according to type of professional school, gender, and year in school.

Out of a total of 1,250 potential respondents, 290 surveys were recorded (23.2 percent). Fifty-five surveys were not tabulated because of missing information. Inferential statistical analysis was completed with a sample field of 115 dental students and 120 medical students.

Results

The multiple-choice questions were converted to a five-point Likert scale for the purpose of statistical analysis. Descriptive statistics were tallied from the first three questions measuring the number and percentage distributions of students in medicine and dentistry by gender and class standing.

Each Likert scale response was assigned a score from zero to four. A mean score with a standard deviation was calculated for each survey question. Independent variable measures for this study included type of student (medical or dental), year in school (freshman, sophomore, junior, or senior), and gender (male or female). Question responses were sorted by the independent variables. The t-test and Levene's Test for Equality of Variances were applied to determine statistically significant variation in the mean response scores between the two student

populations in various measures of independent and dependent variables.

Post hoc analysis was performed on the five stress causal factor groups (dependent variables) to measure between subject effects linked to the independent variables to determine if there was a significant main effect in any of these measurements. A univariate ANOVA method was applied to determine the degree of variability in the dependent variable groups, either between or within these groups, which could be explained or accounted for by any of the three independent variables: type of student, year in school, and gender. A two-way MANOVA analysis was performed to determine if there was a significant interaction between class standing and type of student in explaining the differences in the dependent variable data. A partial eta-squared test was performed on the data to calculate the effect of sample size on the statistical significance of the findings.

Statistical analysis of the survey data revealed that a few of the measured items, particularly in the personal life issues scale, were not relevant to some students and thus received a score of "0" or "not pertinent." An example of this would be the response item for "having children at home." For the MANOVA calculation, in which a listwise deletion is used, this presented an analytical problem. We agreed that such items cannot be a source of stress to the students since they have essentially been deemed irrelevant. Therefore, a decision was made to combine "0" responses, "1" responses, and no responses and assign each a value of "1." Each of the thirty-four stress measurement questions were collated into one of five categories of causal factors: academic performance-AP, patient and clinic responsibilities-PTC, faculty relations-FR, personal life issues-PLI, and professional identity-PI.

The overall findings of this investigation showed that dental students perceived that they experienced greater levels of stress than medical students in three of the five measured categories (Table 2). The only category in which medical students demonstrated greater stress levels than dental students was professional identity. A two-way MANOVA used to determine year in school effects revealed that while medical student stress decreased slightly with each progressive year, dental student stress increased dramatically in the third year, generally coincident with entrance into the clinics (Table 3). There were no significant gender effects.

Table 2. Comparison of dental students to medical students in this study

Stressor Question Cluster Group	Means of Dental Students	Means of Medical Students	t-Test	Significance
Academic Performance (AP)	2.56	2.37	3.94	.000*
Patient and Clinic Responsibilities (PTC)	2.39	2.21	4.44	.000*
Faculty Relations (FR)	2.38	1.87	7.54	.000*
Personal Life Issues (PLI)	2.30	2.31	-0.45	Not Significant
Professional Identity (PI)	2.05	2.23	-2.38	.018**

*Significant $p < .01$ **Significant $p < .05$

With regard to stress-causal factors, for both medical and dental students, results showed that stress is highest concerning academic performance. Dental students were least stressed in the area of professional identity, while medical students were least stressed with faculty relations. The highest mean score registered for all thirty-four potential stressors was in the area of examinations and grades, with medical students citing slightly more stress than dental students. For faculty relations, the dental student stress rate was significantly higher than the medical student stress rate, with “inconsistency of feedback on your work among different instructors” receiving the highest rating from both groups. Personal life issues was the only stress-causal category showing no significant difference between medical and dental students. However, t-test group results

showed that medical students did perceive slightly more stress related to having children at home, while dental students showed more stress regarding personal physical health. Alpha coefficients were calculated for each of the stress-causal categories and were found to be within an acceptable range of 0.7 and above (Table 4).

Discussion

The collective evidence of separate studies of medical and dental students over the past three decades strongly suggests that these students experience high levels of stress during their training. The overall findings of our study were that dental students had greater levels of perceived stress than medical students in three of the five measured categories. Because the DES was originally designed to measure dental student stress, it is conceivable that other sources of stress unique to medical students were not included in the survey instrument, thereby accounting for the higher dental student scores.

Both medical and dental students are most stressed by grades and performance on examinations. This is consistent with another high stressor: fear of failing a course or licensing examination. These results are likely reflective of the particular population entering professional schools. In order to gain entrance, applicants must be high performers scholastically and on requisite entrance examinations (MCAT and DAT). These students are generally highly competitive, motivated individuals who continue to strive for excellence after admission to professional school. Additionally, competition for residency and postdoctoral programs can be fierce, with only the highest achievers gaining entrance to the most desirable programs.

Table 3. Tests of between-subjects effects (students * year in school), on the dependent variable of patient and clinic responsibilities

Students	Class	Mean (sd)	N
Dental	1	2.33 (.33)	37
	2	2.30 (.30)	36
	3	2.66 (.51)	23
	4	2.38 (.43)	34
	Total	2.39 (.40)	130
Medical	1	2.28 (.11)	30
	2	2.25 (.17)	52
	3	2.17 (.36)	56
	4	2.11 (.43)	18
	Total	2.21 (.29)	156
Combined	1	2.31 (.26)	67
	2	2.27 (.24)	88
	3	2.31 (.47)	79
	4	2.28 (.45)	52
	Total	2.29 (.36)	286

The second highest stressor for dental students was inconsistency of feedback on work among different instructors. This did not appear as a top ten stressor for medical students. There could be several explanations for this. Typically, in order to graduate, dental students are required to complete a designated number of treatment procedures in a variety of categories and dental disciplines, while still providing comprehensive care to all of their patients. For the most part, dental students actually deliver the treatment themselves (much of it irreversible), largely without faculty assistance except as necessary. Faculty interaction with students can be limited to critical, and sometimes subjective, evaluations of the students' technical skills as well as their medical knowledge. In many dental schools, faculty members are required to provide critiques at multiple points during a given treatment procedure. Dental students rarely see role modeling by dental faculty members, who tend to function primarily as "checkers" rather than providers of patient care.

Conversely, medical students have no "disease requirements," but rather typically shadow and support attending faculty and residents in the treatment and care of patients who happen to be hospitalized for a variety of health concerns. They are rarely put in the position of providing patient treatment alone and receive far fewer graded evaluations than dental students. Additionally, there can be a great sense of community in medical student clinical clerkships, which may not exist in the dental school setting. Medical students usually experience these clerkships with other students, which provides a buffer between students and attending faculty, whereas dental students nearly always provide care independently and work with faculty members one-on-one.

Increasing costs of a professional education have added a new and very significant stressor for both medical and dental students. In the past, becoming a health care professional carried with it a sense of financial security. With increasing student debt, in conjunction with increasingly uncertain earning potential, students are concerned about their long-term financial security. Concurrent with this, increases in housing and the cost of living, and an increased number of students with families to support, only exacerbate the high stress levels associated with the need for financial well-being.

While dental students scored significantly higher than medical students in most of the measured variables, medical students had greater stress levels

Table 4. Alpha coefficients for groups of stressor questions

Stressor Question Cluster Group	Alpha Coefficient
Academic Performance	.754
Patient and Clinic Responsibilities	.747
Faculty Relations	.767
Personal Life Issues	.741
Professional Identity	.723
Total Scale	.875

concerning their sense of professional identity. This might indicate that medical students suffer from a lack of confidence and uncertainty about their own abilities. Despite the fact that they have likely received a great deal of positive feedback throughout their academic careers, medical students often fear that they have "fooled" everyone and are not truly as skilled and able as many think. This often translates into an unspoken fear of failure as well as a sense that they are imposters. Our findings indicate that the imposter effect increases as medical students enter their clinical years and patients, support staff, and others begin to identify them as doctors. As students move through the clinical educational environment, they also are very uncertain about their own thoughts and experiences relating to illness and death. There is a sense of discomfort about crossing social boundaries with patients who are facing some of the most traumatic moments of their lives. There may also be a sense of stress that is realized as students struggle with their own fears relating to illness and death.

Our observations as educators suggest that medical students also have very practical fears relating to insecurities about their professional future. There is a sense of trepidation as they transition from the classroom to clinical education to residencies. Stress associated with residency choice is particularly high. Medical students are required to do a residency, whereas doing so is optional for dental students. The residency program a medical student chooses defines his or her professional life. Students often feel that they need to make this decision blindly because they must begin pursuing a residency before they have experienced all available specialties during their clinical clerkships, which primarily occur in the junior year of medical school. There is a real fear of making a wrong decision and not entering the residency that is best for them. This is evidenced by the fact that as many as 25 percent of all medical

students change their specialty choice after beginning residency.²⁹

Although studies^{4,7,9,15} have suggested that female medical and dental students are more at risk of suffering the effects of stress than are men, our study found no statistically significant difference between genders. Today, approximately half of all dental and medical students are female, and there is a larger representation of women on the faculties of the schools. Perhaps this recent trend has alleviated some of the pressures previously experienced by women to equal, and even outperform, their male counterparts in order to prove their worth in what were once male-dominated fields.

This study has brought to our attention many of the risk factors that add to the stress levels of medical and dental students. While many professional schools and universities offer counseling services, tutoring services, crisis intervention, ombudsmen, and time management strategies, it is difficult to measure the effectiveness of these offerings. Some dental schools have taken steps to eliminate clinical requirements and provide more flexibility in the clinical curriculum. Although this may relieve some of the burden on dental students, it would not necessarily change the faculty-student relationship. Further study is indicated to determine the effects of curricular changes on overall student stress levels.

Because this research was limited to one campus located in the northeastern United States, it is not known whether trends found reflect local attitudes or are more widespread. The low response rate might also limit interpretation of the findings and encourages further questions. Were some students too stressed to deal with yet another task? Or were they just prioritizing in favor of required assignments over an optional assignment? Regardless, we feel strongly that it is important to continue to examine the causes and consequences of stress and how changes in education, and medical and dental practice, affect the stress levels of our students. It is also important that we openly discuss these results with students and explore ways in which we can work in collaboration to limit the factors that cause stress, decrease the negative effects that result from that stress, and provide appropriate support and treatment.

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