

## Student Quality-of-Life Declines During Third Year Surgical Clerkship

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**Introduction.** Choosing surgery as a career is declining among U.S. medical students. The 8-wk third year surgery clerkship at our institution can be an intense learning experience, and we hypothesized that during this clerkship medical student quality-of-life would drop significantly from baseline, and that this drop would be greater among certain subgroups, such as women students not interested in pursuing a surgical career, and those who place a high value on a controllable lifestyle.

**Methods.** At clerkship orientation (baseline), students were asked to complete a survey that measured quality-of-life on an 84-point scale, and depression on a 40-point scale. The quality-of-life scale was composed of select questions from the Medical Outcomes Study, and the Harvard Department of Psychiatry/ NDSB brief screening instrument was used to measure depression. Students were also asked the typical number of hours they slept per night. Demographics, attitude toward a controllable lifestyle, and top three specialties of interest were also gathered at baseline. On week 6 of the clerkship, students were surveyed on the same quality-of-life and depression scales, and asked average hours of sleep per night for the previous week.

**Results.** From June 2005 through December 2006, 143 of 177 (81%) students agreed to participate, and after exclusions for missing data, 137 students were included in the analysis. Sixty-nine students were women (51%), and the average age was 25.8 (sd 2.6).

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Mean quality-of-life at baseline was 57.0 (sd 11.3) and at week 6 was 50.4 (sd 10.1) representing a statistically significant average decline of 6.6 points ( $P < 0.0001$ ). Mean depression at baseline was 14.4 (sd 3.8) and at week 6 was 15.1 (sd 3.6), representing a small but significant average decline of 0.7 points ( $P = 0.0155$ ). Mean sleep at baseline was 6.3 h/night (sd 0.9) and at week 6 was 5.7 h/night (sd 1.2), representing a statistically significant average decline of 0.6 h/night ( $P < 0.0001$ ). Declines were similar on all outcomes between men *versus* women, those who ranked surgery in their top three career choices *versus* those who did not, and those who ranked controllable lifestyle as "very important" *versus* all other categories.

**Conclusion.** Quality-of-life and sleep declines and depression increases significantly in third-year medical students from orientation to week 6 of their surgery clerkship at our institution. We look forward to studying quality-of-life on other clerkships for comparison, assessing whether the magnitude of this decline in quality-of-life predicts students avoiding a future career in surgery, and testing interventions to prevent this decline in quality-of-life during the clerkship. © 2007 Elsevier Inc. All rights reserved.

**Key Words:** quality-of-life; students, medical; education, medical; clinical clerkship; surgery; depression.

### INTRODUCTION

Declining interest of United States medical students in a surgical career is well-documented [1–3]. Many express the belief that this decline will lead to a future shortage of surgeons [2, 4, 5].

One of the many proposed reasons for this decline is the student belief that a career in surgery compromises

quality-of-life. This may be seen after training with attending surgeons experiencing a high “burn out” rate [6], and also during surgical training where residency programs struggle to comply with the 80-h work limits [7] and suffer attrition rates as high as 20% [8].

Student quality-of-life is impacted by a variety of factors, sometimes to an unacceptable level. Recent studies demonstrate that medical students are concerned about their overall quality-of-life. Students believe that choosing a career in surgery would negatively impact factors related to quality-of-life [9, 10]. Students predict lifestyle, work hours and workload during residency [11, 12], as well as work hours, call schedule, and lifestyle issues after residency [12–14] would be undesirable. Specifically, students want a “controllable lifestyle” [15–17].

The third-year surgical clerkship is an intensive experience. This experience has been shown to impact how students view a future career in surgery [18]. In a survey of third-year medical students, surgery was identified as the third most influential clerkship with regards to specialty choice [19]. As students proceed through their years at medical school, an increasing proportion of the students believe that a surgical career negatively impacts quality-of-life [20].

During the surgical clerkship, students are afforded a chance to witness the quality-of-life of the practicing surgeons training them, as well as imagine what their quality-of-life might be in a surgical residency or as a future surgeon. Surgeons do not have a controllable lifestyle [6, 15], but having a controllable lifestyle may be more important to some students than others, thus impacting perceived quality-of-life differentially. Students with a strong interest in a surgical career may not prioritize controllable lifestyle issues [12] and, therefore, may not perceive a low quality-of-life when in an uncontrollable lifestyle.

Researchers and educators have hypothesized that women place a higher value on practice lifestyle than men, and this partly explains their relative lack of interest in surgery (although the assertion that women are less interested than men in a surgical career remains a subject of controversy [1, 21, 22]. Park *et al.* noted “Female students may be dissuaded from choosing general surgery by negative perceptions of family life and lifestyle associated with general surgical careers” [17]. Another article states that to encourage women to join surgery, surgical clerkship program directors “are strongly encouraged to . . . counsel these future (female) surgeons regarding the opportunities to have families and still be engaged in an active surgical practitioner (sic)” [2]. Indeed, Baxter *et al.* found that in fourth-year medical students, women placed a significantly higher importance than men on part-time residencies (8% *versus* 5%), part-time work (36% *versus* 15%), parental leave in residency (39% *versus* 9%), and

parental leave during work as a surgeon (49% *versus* 12%), and concluded that “the overlap of the years of a long postgraduate residency and the critical years of childbearing may discourage many women from entering a career in surgery, especially given the lack of part-time residencies and inflexibility of rotation and call schedules” [23]. A qualitative study of female pre-registration house officers found that a key factor in choosing surgery was “hours worked by surgeons, and the perceived incompatibility of the hours with bringing up a family” [24].

However, other studies have demonstrated that large proportions of both men and women prioritize lifestyle issues, and there is no gender differential in this regard [14–16, 25]. Researchers argue that the real reasons for the gender differential include gender-based discrimination in residency selection for surgery [26], and that female students’ surgical training experiences are not comparable to those of male students [27], which are other considerations that would negatively impact quality-of-life. Furthermore, lack of role modeling by female surgeons has been found to be an important contributor [17].

Perhaps quality-of-life during the third-year surgical clerkship, if low, dissuades students from a future career in surgery. But how does the surgical clerkship experience impact the quality-of-life of medical students? The authors could not find any reports of studies of the third-year surgical clerkship experience that used specific quality-of-life scales in their measurements. Considering adequate sleep as a possible quality-of-life metric, a study of one surgical clerkship found that students slept an average of 5.8 h per night during the clerkship. Although this is intuitively somewhat low, it was not clear if this amount of sleep in the students represented a departure from normal sleeping patterns [28].

Levels of depression are another possible metric for quality-of-life. The proportion of medical students experiencing depression was found to be 18% to 31% in one study [29], another study found 23% of third-year students surveyed had depression at a clinical level [30], and a third study found that approximately 45% had burnout [31, 32]. However, no studies were found addressing the impact of the surgical clerkship on depression levels. In the American Surgical Association Blue Ribbon Committee’s 2004 report on surgical education, the group provides recommendations for improving surgical training, which endorses the 80-h work week for residents, saying it creates “a training environment for residents that reduces fatigue and promotes improved lifestyles for the residents and their families, and provides flexibility for parenting” [22]. However, no recommendations are made with respect to medical student lifestyle while in surgical training.

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