The Oxymoron of Financial Illiteracy in a Highly Educated Population: Are We Appropriately Equipping Trainees?

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Background: Medical professionals often incur a significant financial burden in pursuit of a medical education. Despite rigorous medical education, financial education appears to be lacking during training. This study intended to explore the financial preparedness and education of 2 cohorts of medical professionals—alumni graduates of a single institution and current plastic surgery residency trainees.

Methods: An electronic survey of the residency alumni at a single institution across all specialties over a 50-year period was conducted. This was conducted concurrent with a survey to current plastic surgery residency trainees across the country. The survey explored several core financially relevant areas, including financial education at various levels of training, fiscal goals, debt profile, spending and saving habits, investment management, financial and family obligations, estate planning, and retirement preparedness.

Results: A total of 521 alumni and 84 residents completed the survey from the residency alumni cohort and plastic surgery training programs cohort, respectively. Results from both groups demonstrated that although the large majority considered financial education a priority, this was not prioritized in medical or residency training. Most were introduced to financial education either by a family member or by self-directed learning. Data on investments, savings, finances, and retirement planning are also presented.

Conclusions: As a very literate group, there is an unacceptably high level of “illiteracy” concerning financial education at an early stage. Practicing physicians and current trainees believe that a more directed approach to financial education should be adopted, rather than the current laissez-faire climate during medical education and residency training. (Plast Reconstr Surg Glob Open 2019;7:e2329; doi: 10.1097/GOX.0000000000002329; Published online 3 July 2019.)

INTRODUCTION

The process of training for a career in the medical profession is a laborious, intensive, and expensive venture. The American Medical Association estimated the average education debt of 2,014 graduating medical students at $176,834 ($167,763 and $190,053 for public and private schools, respectively). Furthermore, 84% of graduates carry outstanding educational loans, 79% have an educational debt of at least $100,000, 43% have an educational debt of at least $200,000, and 10% have an educational debt of at least $300,000. This is a significant burden of debt, when compared to most college-educated peers who have accumulated a fraction of that debt. Residents have been shown to have not only more debt than the general public, but also less net wealth, fewer assets, and less retirement savings. Although the future earning potential is promising, it varies by residency choice and the potential for relatively low discretionary income due to educational debt and family support obligations.

Prior studies have suggested that the amount of debt of graduating medical students may play in the ultimate choice of specialty to pursue for a career. A study by Spar et al. found no relationship between medical student’s level of debt and their specialty preferences. However, a more recent study by McDonald et al. noted that as the

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amount of indebtedness of US medical school graduates increased, they were less likely to choose a subspecialty career compared to graduates with no debt. The latter article further discussed how a general practice physician would typically get paid more directly out of residency, compared to a trainee pursuing a fellowship, and supports the overall notion that resident indebtedness is associated with differences in career plans.

Educational debt may also result in additional stress. Survey of residents showed that higher debt was associated with more severe self-reported depressive symptoms. A 2004 survey of Emergency Medicine residents by Glaspé et al. showed that existing debt was the most common reason for moonlighting. These studies also highlight some of the impact of the educational debt burden on mental status and work habits. According to the Great American Physician Survey of 2010, only 27.8% of physicians felt that they could retire on schedule, while 43.6% indicated they would work full time for more years than intended because of inability to achieve adequate retirement portfolio status. These findings reveal that financial burdens weigh heavily on many physicians’ minds. In addition to the majority of physicians having medical school debt, many have put off starting a family, or aggressively pursuing other personal and financial goals. The end result is a population well into their 30s and 40s, with excellent proficiency in medical education and unfortunate lack of solid financial literacy.

Residency programs have well-defined goals and objectives for rotations to train residents to become competent and effective physicians in their field. There is no such setup for financial literacy education, despite the fact that most students incur one of the largest debts in their lifetimes when they sign for medical education loans. We hypothesize that the majority of residency and medical training do not address financial education literacy as part of the core educational curriculum. Thus, the current study sought to investigate 2 cohorts regarding financial education. The first cohort included a broad focus of Graduate Medical Education (GME) Alumni consisting of practicing physicians across all specialties, and the second cohort consisted of a smaller, more specific cohort of plastic surgery resident trainees. The goal was to evaluate financial education and financial literacy in these 2 cohorts, to better elucidate—both at the general and specific levels—the challenges with financial education in a highly educated population.

**METHODS**

**GME Alumni Physicians**

Following Institutional Review Board approval, an electronic pilot survey was distributed to the Institution’s residency alumni via the University’s GME Office. Participants’ graduation dates ranged from 1960 to 2010. Data were collected on 10 core areas: demographics, saving patterns, financial education, debt status, money management, investments, retirement, end-of-life planning, estate planning, and job satisfaction. The aim of this survey was to examine trends across various specialties and subspecialties. Initial survey administration was via e-mail, and follow-up was done via both e-mails and phone calls.

**Plastic Surgery Trainees**

Following the pilot survey, the survey was then administered to plastic surgery residencies across the country for completion by residents at various levels in training. The survey was sent to all residency programs listed by the American Council of Academic Plastic Surgeons. This survey aimed to evaluate trends in plastic surgical training. Initial survey administration was via e-mail, and follow-up was done via both e-mails and phone calls to programs’ resident coordinators.

**RESULTS**

**Participants**

**GME Alumni Physicians**

The survey distributed to Loma Linda University residency alumni across all specialties was completed by 521 people.

**Plastic Surgery Trainees**

The financial survey administered to plastic surgery residents was completed by 84 residents.

**Demographic Characteristics**

**GME Alumni Physicians**

The demographic characteristics of the GME Alumni Physician group are presented in Table 1. Most respondents were White males. The alumni group had practitioners across all medical specialties. Practitioners in surgical specialties and subspecialties comprised 23.7% of the respondents.

Plastic surgeons constituted 0.8% of the total alumni cohort.

**Plastic Surgery Trainees**

As shown in Table 2, the majority in the plastic surgery resident cohort were aged 30–39 years (58.3%), married/partnered (59.2%), and had no children (71.1%). In the GME alumni cohort, the majority were over 50 years of age (70.3%), married/partnered (86%), had 2 or more children, and did not complete fellowships.

**Financial Planning Literacy**

**GME Alumni Physicians**

In the GME Alumni Physician cohort, 18% reported receiving financial planning training in medical school (Fig. 1). During residency, 18% of alumni physicians reported financial planning training (Fig. 2). Twenty-six percent of alumni were introduced to financial education by a family member, and 30% through self-directed learning and investigation. Fifty-two percent of alumni thought financial literacy was a priority during practice (Fig. 3). Regarding the most appropriate time to receive financial education, 54% of the alumni cohort believe that the most appropriate time is before residency (Fig. 4). Additional
Table 1. Demographics of GME Alumni Physicians

| Demographic Information | GME Alumni Respondent Characteristics | No. Respondents (%) |
|-------------------------|---------------------------------------|---------------------|
| Age, y                  |                                       |                     |
| 18–29                   | 0 (0)                                 |                     |
| 30–39                   | 81 (15.7)                             |                     |
| 40–49                   | 72 (14.0)                             |                     |
| 50+                     | 362 (70.3)                            |                     |
| Sex                     |                                       |                     |
| Male                    | 398 (77.3)                            |                     |
| Female                  | 117 (22.7)                            |                     |
| Ethnic background       |                                       |                     |
| American Indian         | 4 (0.8)                               |                     |
| Asian                   | 48 (9.3)                              |                     |
| African American/black  | 12 (2.3)                              |                     |
| Pacific Islander        | 2 (0.4)                               |                     |
| White                   | 426 (82.7)                            |                     |
| Other                   | 23 (4.5)                              |                     |
| Fellowship completed    |                                       |                     |
| Yes                     | 163 (31.7)                            |                     |
| No                      | 352 (68.3)                            |                     |
| Marital status          |                                       |                     |
| Never married           | 23 (4.9)                              |                     |
| Married/partnered       | 407 (86.0)                            |                     |
| Widowed                 | 12 (2.5)                              |                     |
| Divorced                | 27 (5.7)                              |                     |
| Separated               | 4 (0.8)                               |                     |
| No. children            |                                       |                     |
| 0                       | 63 (13.3)                             |                     |
| 1                       | 48 (10.1)                             |                     |
| 2                       | 168 (35.5)                            |                     |
| 3                       | 106 (22.4)                            |                     |
| 4                       | 64 (13.5)                             |                     |
| 5+                      | 24 (5.1)                              |                     |

Table 2. Demographics of Plastic Surgery Trainees

| Demographic Information | Plastic Surgery Residents Respondent Characteristics | No. Respondents (%) |
|-------------------------|-----------------------------------------------------|---------------------|
| Age, y                  |                                                     |                     |
| 18–29                   | 31 (36.9)                                            |                     |
| 30–39                   | 49 (58.3)                                            |                     |
| 40–49                   | 4 (4.8)                                              |                     |
| 50+                     | 0 (0)                                                |                     |
| Sex                     |                                                     |                     |
| Male                    | 57 (67.9)                                            |                     |
| Female                  | 27 (32.1)                                            |                     |
| Ethnic background       |                                                     |                     |
| American Indian         | 0 (0)                                                |                     |
| Asian                   | 10 (11.9)                                            |                     |
| African American/black  | 3 (3.6)                                              |                     |
| Pacific Islander        | 2 (2.4)                                              |                     |
| White                   | 61 (72.6)                                            |                     |
| Other                   | 8 (9.5)                                              |                     |
| Postgraduate training year |                                                  |                     |
| PGY1                    | 13 (15.5)                                            |                     |
| PGY2                    | 12 (14.3)                                            |                     |
| PGY3                    | 7 (8.3)                                              |                     |
| PGY4                    | 15 (17.9)                                            |                     |
| PGY5                    | 9 (10.7)                                             |                     |
| PGY6                    | 8 (9.5)                                              |                     |
| Fellow                  | 20 (23.8)                                            |                     |
| Marital status          |                                                     |                     |
| Never married           | 31 (40.8)                                            |                     |
| Married/partnered       | 45 (59.2)                                            |                     |
| Widowed                 | 0 (0)                                                |                     |
| Divorced                | 0 (0)                                                |                     |
| Separated               | 0 (0)                                                |                     |
| No. children            |                                                     |                     |
| 0                       | 54 (71.1)                                            |                     |
| 1                       | 6 (7.9)                                              |                     |
| 2                       | 10 (13.2)                                            |                     |
| 3                       | 4 (5.3)                                              |                     |
| 4                       | 2 (2.6)                                              |                     |
| 5+                      | 0 (0)                                                |                     |

Fig. 1. Financial planning education during medical school according to residents (A) and alumni groups (B).

Fig. 2. Financial planning education during residency training according to residents (A) and alumni groups (B).
results regarding who first introduced the participants to financial education can be found in Table 3.

**Plastic Surgery Trainees**

In the plastic surgery resident cohort, 54% reported they had received financial planning education during medical school (Fig. 2). Only 44% of current residents report receiving financial planning education during residency (Fig. 3). Thirty-seven percent of current residents had financial management introduced to them through a family member, while in 27% of respondents, financial education was through self-directed learning. Forty-nine percent of current residents reported they first considered financial literacy a priority during residency (Fig. 3). Regarding the most appropriate time to receive financial education, 64% of current residents believe that the most appropriate time to receive this education is during residency (Fig. 4). Additional results regarding who first introduced the participants to financial education can be found in Table 3.
The majority (79%) of the alumni are investors. The alumni group mostly invested in mutual funds (68%), stocks (58%), and bonds (40%). Half of the alumni group manage their own investments (50.1% of alumni). Fifty-one percent of the alumni cohort manage their own finances. Approximately 60% of the alumni have a financial advisor. The majority of the alumni cohort contribute to a savings account (68% of alumni) and a retirement account (73% of alumni). More details on investment results can be seen in Table 4.

Approximately half (49%) of the current residents are investors. Half of the trainees manage their own investments (51% of current residents). The majority of residents manage their own finances (68%). Only 25% of current residents have a financial advisor. The majority of trainees contribute to a savings account (63% of residents) and a retirement account (54% of residents). Forty-one percent of the residents surveyed contribute to a retirement fund offered by their residency, while 33% state that their residencies do not offer retirement funds. More details on investment results can be seen in Table 3.

Sixty-seven of the alumni reported no credit card debt. A minority (7.2%) of alumni have greater than $20,000 in credit card debt. Three percent of the alumni group reported over $50,000 in credit card debt (Table 5).

Sixty-one percent of the residents reported no credit card debt. A minority (6.4%) of residents have greater than $20,000 in credit card debt. None of the resident respondents reported over $50,000 in credit card debt (Table 5).
Plastic Surgery Trainees

Forty-four percent of residents planned to start repaying loans after residency is completed (Table 6).

Financial Control, Insurance, and Retirement

GME Alumni Physicians

The majority of the alumni group have disability and life insurances. A large percentage would like to retire at ages 65–74 years, and most of them believe they can financially meet that retirement goal. Ninety percent of alumni feel they are in control of their finances. Table 7 shows more detailed data from this section of the survey.

Plastic Surgery Trainees

Most of the resident cohort also have disability, life insurance, and would like to retire between 65 and 74 years of age, and the majority believe they can meet this goal for retirement. Eighty-three percent of residents feel that they are in control of their finances. Table 7 shows more detailed data from this section of the survey.

DISCUSSION

In 2008, Rohrich et al. (11) reported the results of a survey population of currently active plastic surgeons over 50 years of age. They found that a higher percentage of plastic surgeons reported economically viable practices compared to their counterparts in other specialties. Although 55% of respondents retired earlier than expected, the majority of the reasons for retirement were the stress of practice, malpractice issues, increasing regulation of medicine, declining reimbursement, and personal health concerns, to name a few. About one third responded that they would retire if they could afford it. Imahara et al. (12) studied the graduation plans of plastic surgery residents attending the 2009 American Society of Plastic Surgery Senior Residents Conference, and the authors noted that trainees with dependents were more likely to enter practice without further fellowship training. Both Imahara et al. (12) and Umansky et al. (13) noted that the presence of children affected the career path chosen, with the former proposing that economic factors and the need to commence working to support a family may influence transitioning directly into practice without pursuing further fellowship training. To better understand the impact of these factors, we surveyed plastic surgery residents as well as an alumni cohort over a 50-year period from various specialties to elicit their financial literacy and preparedness. By returning to the fundamental grassroots, we explore financial education and evaluate if medical school and residency curricula are equipping trainees with the tools needed to effectually plan for their fiscal and financial futures.

In a financial survey of medical residents reported by Dhaliwal and Chou in 2007, the majority of interns disagreed with the statement: “I have adequate knowledge of personal finance,” with an average Likert score of 1.7 out of a maximum of 5.² The lack of adequate financial knowledge is not, however, limited to new residents. A survey of 133 members of the Midwestern Vascular Surgical Society aimed to evaluate their self-perceived knowledge of 11 business topics related to the practice of medicine. They were scored on a range of 0–22, with higher scores meaning participants felt they have a lot of knowledge about the topic (14). The results of this survey showed that 8 members recorded a zero in every category (which covered topics such as financial accounting, investments, antitrust laws, budgeting, and healthcare economics). In addition, the overall mean score was 7.78 out of 22, which indicated that many experienced surgeons perceive their own knowledge about business principles to be quite poor. It is ideal if physicians are introduced to financial principles before even starting medical school, as a large amount of debt is often incurred during this time. However, these studies point out that this has often not happened by the time residency is initiated, for whatever reason. The authors of this paper believe that it is the next best option to introduce and continue to reinforce these concepts during medical school and residency.

Although there is some improvement over the years as evidenced in the figures when comparing the residency and alumni cohorts, the success of our current curricula in addressing this topic is still dismal. In this study, both the plastic surgery group and the alumni multispecialty cohort agreed that financial education should be a crucial part of medical education, and both cohorts felt that it should occur earlier in training, specifically before or during medical school and in residency, as opposed to deciphering this in practice. Furthermore, in both cohorts, introduction to financial education for the majority was not done in the medical or residency education training but rather occurred through self-directed learning or through family members. In the comments section of this survey, many responders expressed frustration that the financial education they received consisted of signing a promissory note at the beginning of medical school, receiving no training in-between, and then being expected to sign another financial promissory note before graduation at an exit interview where they promise to pay their loans back. No financial education had occurred in the intervening years in many cases. Responses from both cohorts in several areas indicated that this was not a good paradigm.

Despite the importance of financial education for residents, the actual financial education given to residents during their training is underwhelming. In a 2004 survey of emergency medicine residents, 82% reported that they did not receive any debt management education during their residency and 79% reported that they received no financial planning education during residency (9). Nevertheless, 84% of them believed that these topics should be covered during residency. The importance of financial education during residency is also apparent to program directors. In a survey given to general surgery program directors, 87% agreed or strongly agreed that residents should be trained in financial management and 63% believed that this education should start during postgraduate years 2–5 (15). Our study results echo these opinions that most physicians believe financial education is best introduced before residency or during residency. Our study also shows that 54% of residents received financial education during medical school, compared to 18% of the alumni. In addition, 44%
of residents received financial education during residency, again compared to 18% of the alumni. This suggests that improvements have occurred in the past few decades over the 50-year period that was evaluated, although there is a possibility of length time bias in the alumni group, and the decline with recall associated with the length of time from survey to when financial education actually occurred could have resulted in reported percentages lower than the actual percentages. Nevertheless, there is still unison from both cohorts that financial education training is critical but still lacking, and should be an integral part of medical and residency curricula.

There are several methods through which medical and residency programs could integrate financial education into the curricula. Residency program directors should facilitate meetings between well-vetted financial planners with client fiduciary responsibility and members of the residency program to ensure residents are educated on investing, saving, and other financial options available to them and thus maximize their financial literacy, freedom, and security. Based on our study findings, trainees and practitioners agree that this should occur at an early stage concurrent with medical and residency education.

Another solution is having financial education sessions at educational conferences, business meetings, and financial education classes in medical school and residency. Also, offering one-on-one availability of specialists is one of the ways in which medical and graduate education offices can incorporate this facet of education. The article by Dhaliwal and Chou discussed how one 90-minute seminar on personal finances given to medical residents led to significant changes in allocation of tax-deferred retirement savings. This was a relatively simple intervention that leads to potentially meaningful financial benefits that could be sustained in the long term. In addition, more residency programs could be encouraged to provide 401(k) or 403(b) plans, as 1 study showed that residents were more likely to save for retirement when these programs were available at their institutions. Our study shows that only 54% of residents and 73% of alumni regularly contributed to a retirement plan. We additionally call on national specialty meetings to include more financial education topics, especially during “Residents Day”. These sessions have been well received in the past, and offering them primarily to residents will likely result in a sizeable, captive audience. We highlight our recommendations for residency education improvements in Figure 5.

As with survey-based studies, there are certain limitations to this study. One such limitation is the possibility of sampling bias. An e-mail was sent to all plastic surgery residency programs listed by the American Council of Academic Plastic Surgeons. Targeting all plastic surgery residencies across the country would have helped significantly to ameliorate this risk; however, the small sample sizes for the plastic surgery resident cohort increases this risk of sampling error. Additionally, the GME physician cohort was targeted through the GME alumni office, which then sent e-mails to practicing physicians on record. It is difficult to assess the response rate of both cohorts as it is tough to assess which physicians had working e-mails to view the survey or which doctors even received the survey through the GME office or residency program. Although several steps were taken in the development of the survey based on findings and literature on survey research, the lack of formal validation may also introduce errors into the study. In addition, personal, career, economic, and financial goals for each individual change in response to alterations in the economic and political climates, financial goals, social obligations, and personal preferences, and these dynamic variables can be difficult to control for in survey-based settings. Despite these limitations, however, significant results are gleaned from the study, with a unified position from respondents in both cohorts that financial literacy education is critical, and changes need to be incorporated into the current system to accommodate this area of lack in trainee education.

**CONCLUSIONS**

Financial education should be an important component of medical education, at the medical school and resi-
dency levels. Formal training is lacking in this area, and residents and practitioners not only are interested in having this education as an integral part of their competency training, but also would like this to occur early in training, to equip them with the fundamental financial educational tools to succeed in the future.

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