

# Student Loan Debt Does Not Predict Choosing a Primary Care Specialty for U.S. Women Physicians

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**OBJECTIVE:** There has never been a conclusive test of whether there is a relation between ultimately choosing to be a primary care physician and one's amount of student loan debt at medical school graduation.

**DESIGN/SETTING/PARTICIPANTS:** To test this question, we examined data from the Women Physicians' Health Study, a large, nationally representative, questionnaire-based study of 4,501 U.S. women physicians.

**MEASUREMENTS AND MAIN RESULTS:** We found that the youngest physicians were more than five times as likely as the oldest to have had some student loan debt and far more likely to have had high debt levels ( $p < .0001$ ). However, younger women physicians were also more likely to choose a primary care specialty ( $p < .002$ ). There was no relation between being a primary care physician and amount of indebtedness ( $p = .77$ ); this was true even when the results were adjusted for the physicians' decade of graduation and ethnicity ( $p = .79$ ).

**CONCLUSIONS:** Although there may be other reasons for reducing student loan debt, at least among U.S. women physicians, encouraging primary care as a specialty choice may not be a reason for doing so.

**KEY WORDS:** physicians, women; training support; primary health care; student loans.

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There is a substantial movement in the United States to increase the prevalence of primary care practitioners.<sup>1,2</sup> One mechanism that is occasionally proposed for doing so is decreasing the amount of loan debt medical students incur,<sup>3,4</sup> the premise being that students with higher loan debts will be more likely to choose specialties other than primary care that are typically higher-paying, so their debts could be more quickly and easily repaid.<sup>3-9</sup>

Despite the substantial policy implications of this argument, only one large study ( $n = 5,865$ ), limited to 1974 to 1984 medical school graduates,<sup>10</sup> has partially tested its validity. Although the Association of American Medical Colleges (AAMC)<sup>7</sup> and others<sup>5,8-14</sup> have examined

the relation between indebtedness and residency choice on completion of medical school, residency is a suboptimal proxy for an individual's ultimate specialty choice. Many non-primary care physicians who are not in primary care must first complete primary care residencies before subspecializing, and other physicians may, for many different reasons, subsequently change specialties or decide to subspecialize. This article reports the first large study of the relation between physicians' ultimate specialty choice and student loan debt, and uses the Women Physicians' Health Study (WPHS), a large ( $n = 4,501$  respondents), nationally distributed questionnaire study of women physicians graduating from medical school between 1950 and 1989.

## METHODS

The design of the survey has been more fully described elsewhere,<sup>15</sup> as have the fundamental characteristics of the WPHS population.<sup>16</sup> The WPHS surveyed a stratified random sample of U.S. women physicians; the sampling frame is based on the American Medical Association (AMA) Physician Masterfile, a database intended to record all M.D.s residing in the United States and its possessions. Using a sampling scheme stratified by decade of graduation from medical school, we randomly selected 2,500 women from each of the last four decades' graduating classes (1950 through 1989). We oversampled older women physicians, a population that would otherwise have been sparsely represented by proportional allocation because of the recent increase in numbers of women physicians. We included active, part-time, professionally inactive, and retired physicians, aged 30 to 70 years, who were not in residency training programs in September 1993, when the sampling frame was constructed. In that month, the first of four mailings was sent out; each mailing contained a cover letter and a self-administered 4-page questionnaire. Enrollment was closed in October 1994 (final  $n = 4,501$ ).

Of the 10,000 potential respondents, an estimated 23% were ineligible to participate because their addresses were wrong, or they were men, deceased, living out of the country, or interns or residents. The response rate was 59% of physicians eligible to participate. We compared respondents and nonrespondents in three ways: we used our telephone survey (comparing our telephone-surveyed sample of 200 nonrespondents with all the written survey respondents), the AMA Physician Masterfile (contrasting all respondents with all nonrespondents), and an examination of survey mailing waves (all respondents, from wave 1 through 4) to contrast respondents' and nonrespondents'

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Table 1. Decade of Graduation Versus Debt\*

Decade (n)	Debt, %				
	0	\$1-<\$25,000	\$25,000-<\$50,000	\$50,000-<\$100,000	≥\$100,000
1950 (508)	84.6	13.7	1.4	0.2	0.2
1960 (608)	72.9	22.8	3.4	0.8	0.1
1970 (946)	44.1	42.6	10.0	2.7	0.7
1980 (1,163)	19.2	27.0	30.2	18.1	5.6

\*Cells represent percentage of physicians in each debt level category with specific debt;  $\chi^2 = 1,085.28$ ;  $p = .0000$ .

outcomes for a large number of key variables. From these three investigations, we found that nonrespondents were less likely than were respondents to be board-certified. However, respondents and nonrespondents did not consistently or substantively differ on other tested measures, including age, ethnicity, marital status, number of children, alcohol consumption, fat intake, exercise, smoking status, hours worked per week, frequency of being a primary care practitioner, personal income, or percentage actively practicing medicine.

Based on these findings, the data were weighted by decade of graduation (to adjust for our stratified sampling scheme), and by decade-specific response rate and board-certification status (to adjust for our identified response bias). The analysis weights (within decade) for board-certified and non-board-certified respondents, respectively, are 3.4 and 5.5 (1950s), 9.3 and 17.7 (1960s), 17.9 and 36.5 (1970s), and 28.3 and 63.9 (1980s). Using these weights allows us to make inference to the entire population of women physicians who graduated from medical school between 1950 and 1989. Analyses were conducted using SUDAAN. For the purpose of these analyses, a primary care physician was defined, according to the Social Security Act (section 1-886, h5H, 1993), as being a family medicine, general practice, general internal medicine, pediatric, or public health physician, without subspecialty training. Physician responses to the following question were analyzed: "Please estimate your student loan debt at medical school graduation: \$0; \$1-<\$25,000; \$25,000-<\$50,000; \$50,000-<\$100,000; \$100,000-<\$150,000; \$150,000-<\$200,000; \$200,000-<\$250,000; ≥\$250,000." We constructed a model in SUDAAN, using primary care or other specialty as our dichotomous outcome variable, and forcing in debt (at the first four levels plus ≥\$100,000), decade of graduation (four levels), and ethnicity (five levels).

## RESULTS

Table 1 shows that the youngest physicians were more than five times as likely as the oldest to have some debt. They were also far more likely to have substantial debt: 22 times more likely to have between \$25,000 and \$50,000, 91 times more likely to have between \$50,000 and \$100,000, and 28 times more likely to have at least \$100,000 in student loan debts. Table 2 demonstrates that younger physicians were more likely than older physicians to choose a primary care specialty. Table 3 shows that there is no relation between having chosen a primary care discipline and amount of indebtedness, regardless of decade of graduation. Table 4 shows that African Americans/blacks were most likely of any ethnic group to have incurred some debt, and were also most likely to have incurred debt of at least \$50,000. Asian Americans/Pacific Islanders were least likely of any identified ethnic group to have incurred any debt and were also least likely to have incurred any examined level of debt. Our model (not shown) demonstrated that there was no relation between being a primary care physician and amount of indebtedness ( $p = .77$ ), even when adjusted for decade of graduation and ethnicity ( $p = .79$ ).

## DISCUSSION

Even without the confounding effects of decade of graduation and ethnicity, there is no difference in indebtedness at the time of medical school graduation between U.S. women physicians who are primary care practitioners and those who are not. The relation between student loan debt at time of medical school graduation and ultimate specialty choice has not been tested before, except for one small study ( $n = 351$ ) of physicians graduating from one institution,<sup>17</sup> another small study ( $n = 437$ ) of

Table 2. Decade of Graduation Versus Specialty Choice\*

Specialty (n)	Decade of Graduation, %			
	1950 (n = 1,021)	1960 (n = 969)	1970 (n = 1,182)	1980 (n = 1,273)
Primary care (1,314)	26.9	28.9	31.4	34.4
Non-primary care (3,131)	73.1	71.1	68.6	65.7

\* $\chi^2 = 15.10$ ;  $p = .002$ .

**Table 3. Level of Indebtedness (SE) by Decade of Graduation Versus Specialty Type**

Decade (n)	Debt, (SE) %					p	χ <sup>2</sup>
	\$0	\$1-<\$25,000	\$25,000-<\$50,000	\$50,000-<\$100,000	≥\$100,000		
All decades							
Primary care (1,014)	32.4 (±1.6)	32.0 (±1.7)	20.9 (±1.5)	11.7 (±1.3)	3.0 (±0.8)	.8	1.8
Non-primary care (2,192)	33.9 (±1.1)	29.8 (±1.2)	21.1 (±1.1)	11.5 (±1.0)	3.8 (±0.6)		
1950s							
Primary care (134)	85.8 (±3.0)	12.7 (±2.9)	1.5 (±1.1)	0 (0)	0 (0)	.7	2.20
Non-primary care (368)	83.9 (±2.0)	14.3 (±1.9)	1.4 (±0.6)	0.2 (±0.2)	0.2 (±0.2)		
1960s							
Primary care (168)	73.6 (±3.5)	23.0 (±3.3)	1.7 (±1.0)	1.7 (±1.2)	0 (0)	.4	3.73
Non-primary care (436)	72.9 (±2.2)	23.0 (±2.1)	3.6 (±1.0)	0.4 (±0.4)	0.2 (±0.2)		
1970s							
Primary care (287)	44.6 (±3.1)	41.9 (±3.1)	10.1 (±1.9)	2.9 (±1.0)	0.6 (±0.6)	1.0	0.24
Non-primary care (653)	43.6 (±2.0)	43.2 (±2.0)	10.0 (±1.2)	2.5 (±0.7)	0.7 (±0.4)		
1980s							
Primary care (425)	18.8 (±2.0)	29.8 (±2.4)	29.2 (±2.3)	17.5 (±2.0)	4.7 (±1.2)	.6	2.72
Non-primary care (735)	19.4 (±1.5)	25.4 (±1.7)	30.6 (±1.8)	18.5 (±1.6)	6.1 (±1.0)		

physicians in one specialty,<sup>18</sup> and a data set (n = 5,865) limited to recent young physicians.<sup>10</sup> Prior studies have usually examined physicians immediately after graduation. Although some of these data do suggest an effect of debt on immediate specialty choice,<sup>5,8,9,19</sup> others suggest an equivocal effect or no effect.<sup>13,20,21</sup> However, we believe that it may be more useful to examine more fully differentiated physicians, as we are then able to separate those who remain in primary care from those who subsequently subspecialize.

More recent graduates were far more likely to have had some debt, and typically had far more debt than did older physicians. This has been shown elsewhere.<sup>7,17,22</sup> Debt for medical education (especially for those attending private schools) continues to rise.<sup>7,22</sup> The percentage of graduates with more than \$75,000 in debt rose from 1.5% in 1984 to 33.2% in 1995,<sup>22</sup> and the mean educational debt rose from \$26,496 in 1985<sup>22</sup> to \$71,924 in 1996,<sup>23</sup> far exceeding changes attributable to inflation.

Despite higher debts, more recent graduates were more likely to be primary care practitioners. Others have found this general trend toward producing greater numbers of female primary care practitioners as well: of all women physicians, the percentage in primary care specialties has increased from 1970 to the present, with

36.4% in primary care in 1970, 39.5% in 1980, and 44.1% in 1990.<sup>24</sup> Furthermore, the number of graduating medical students of both genders interested in generalist specialties has risen steadily, increasing 88.8% (16.9% to 31.9%) between 1992 and 1996.<sup>23</sup> Medical school factors influencing this trend toward primary care are both curricular,<sup>25</sup> including provision of ambulatory care experiences with community primary care physicians and required interdisciplinary primary care rotations,<sup>22</sup> and environmental, including provision of supportive environments and role models,<sup>19</sup> an overall greater influence of primary care in medical schools, and changes in health care delivery.<sup>26,27</sup> Other contributors may include individuals' philosophical commitments to primary care, the attractiveness of residencies with fewer training years, a higher potential likelihood of employment, and more higher-paying practice years being seen as a better way to begin to repay debt.<sup>9</sup> Finally, although this tendency toward younger physicians choosing primary care could be a cohort effect, it could also be that some younger physicians will yet become subspecialists, or possibly that some older subspecialists will change to a primary care practice.

It is important to note that these data are only for women physicians. Women physicians earn 62% of men

**Table 4. Ethnicity Versus Debt for Graduates from the 1970s and 1980s**

Ethnicity (n)*	Debt, (SE) %				
	\$0	\$1-<\$25,000	\$25,000-<\$50,000	\$50,000-<\$100,000	≥\$100,000
Hispanic (84)	28.2 (±5.2)	40.8 (±6.0)	17.9 (±4.8)	8.0 (±3.6)	5.0 (±3.0)
Black (90)	8.8 (±2.8)	33.3 (±5.5)	19.8 (±4.6)	29.1 (±5.3)	9.4 (±3.9)
Other (42)	58.2 (±8.4)	14.4 (±5.1)	18.3 (±6.8)	6.8 (±5.2)	2.3 (±2.3)
Asian (148)	58.2 (±4.5)	18.5 (±3.4)	15.7 (±3.4)	5.5 (±2.4)	2.2 (±1.6)
White (1,724)	24.7 (±1.1)	32.9 (±1.2)	25.2 (±1.2)	13.4 (±1.0)	3.7 (±0.6)

\*p = .000.

physicians' salaries, and are more likely to choose primary care specialties than are men.<sup>28</sup> For these and other reasons, the relation between debt and specialty choice may be different for male than for female physicians. However, women physicians constituted 40.3% of medical school classes in 1994,<sup>28</sup> and discerning influences on their specialty choices, even if they are gender-influenced, is essential. It is also worth noting that the debt incurred by all but 6% of 1980s graduates was no more than \$100,000; other studies have suggested that large indebtedness may have greater effects on specialty choice.<sup>3,19</sup> However, only 0.8% more of those with more than \$100,000 in student loan debt chose other specialties (3.8%) than chose primary care (3.0%), suggesting that this lack of relation between debt and specialty choice persists even with high debt levels.

Reducing student loan debt may be valuable for a variety of reasons. However, at least among U.S. women physicians, reducing debt may not be the best way to encourage primary care as a specialty choice.

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