



Introduction

The average debt after medical school graduation has been dramatically increasing, now at a median of \$225,000. A multi-factorial effect of debt on well-being, academic performance, career preparation, career choices, and patient care has been demonstrated in many studies with medical students¹⁻⁷ and could similarly pose a barrier to equity in anesthesia. Previous studies evaluating the effects of loan burden on anesthesia residents highlighted the increased vulnerability of first-generation medical students to loan burden. In this study, we specifically investigated the differential impact of loan burden on residents in anesthesia by gender, race, and first-generation status, as well as their impact on career and personal life decisions, moonlighting, and well-being.

Methods

We conducted a national cross-sectional online survey study with residents by dissemination through anesthesia residency program directors and the American Society of Anesthesiologists email-list. Demographic information, loan burden, the Harvard MHC-SF for wellness assessment, moonlighting status, and career aspiration were assessed. Chi-square and t-tests were conducted to determine if minorities by race, first-generation status, or gender had statistically significant differences in loan burden or its impact.

Results

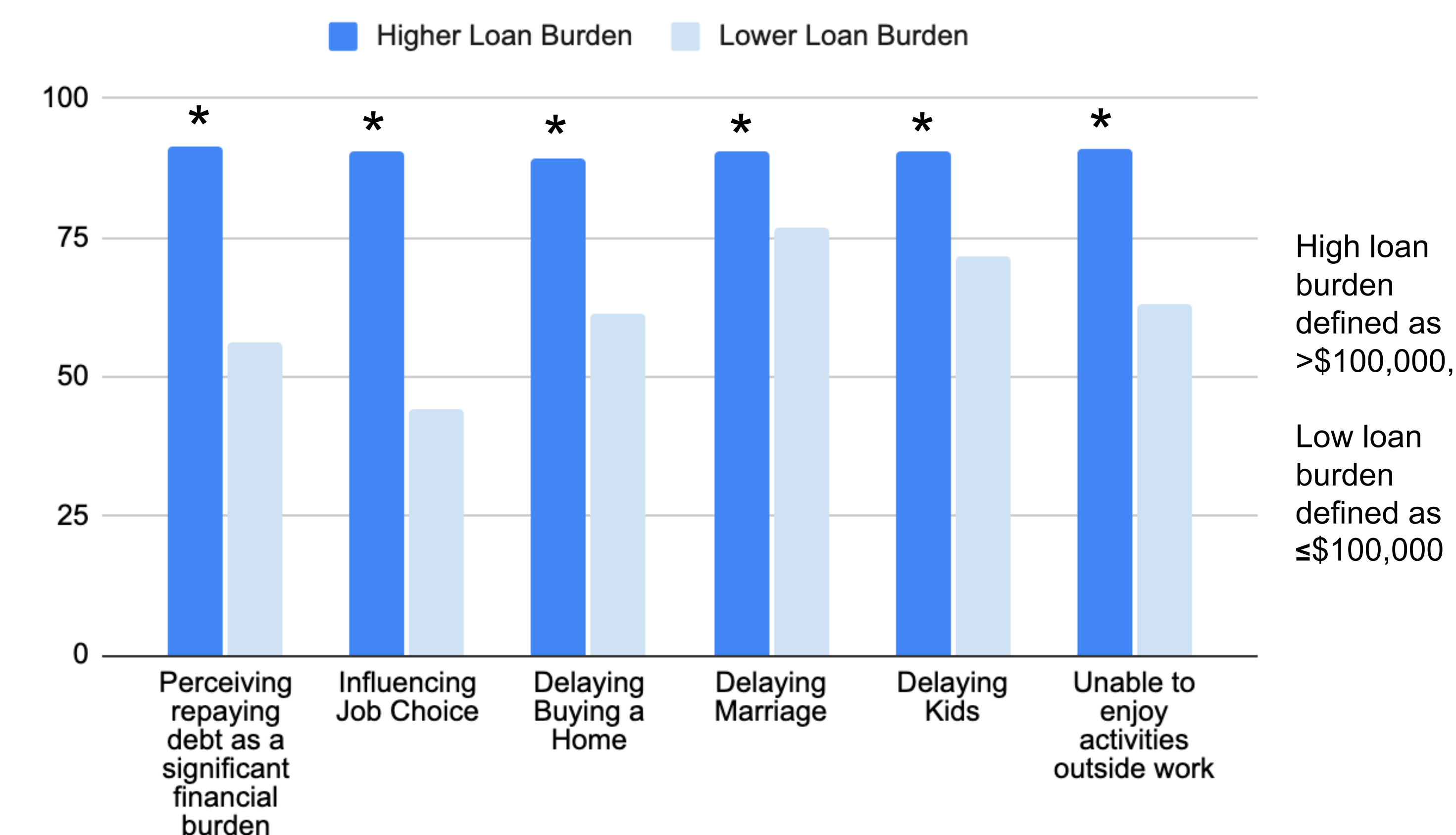
1191 responded of about 5480 total US residents (21.73% response rate) of which 1122 had complete data. First-generation residents (OR 4.32; 95% CI, 3.11-5.99; p=0.000) and minority residents had higher loan burden compared to non-minority residents (92.6% vs. 79.8%; p=0.000). Residents with higher loan burden perceiving repaying debt as a significant financial burden (91.3% vs. 56.4%; p=.000), influencing job choice (90.6% vs. 44.3%; p=.000), delaying buying a home (89.4% vs. 61.2%; p=.000), delay getting married (90.7% vs. 77%; p=.000), delay having kids (90.4% vs. 71.8%; p=.000), and delay enjoying activities outside work (90.8% vs. 63.2%; p=.000). Higher loan burden was associated with decrease in social score subscale on the wellness measure (p=0.032)

Table 1. Characteristics of Anesthesia Residents		N = 1122
Age, Mean (±Std Dev)		31.1 (±3.8)
Gender, N (%)		
Cisgender Female/Woman		448 (39.9%)
Cisgender Male/Man		660 (58.8%)
Genderqueer, Transgender, and Gender not listed		14 (1.2%)
Ethnicity, N (%)		
African American		80 (7.1%)
Hispanic		81 (7.2%)
Native American		11 (1.0%)
Asian		293 (26.2%)
Middle Eastern and North Africa		19 (1.7%)
White		689 (61.6%)
Mixed Race (includes ethnicity above)		68 (6.1%)
Training Year, N (%)		
Intern		266 (23.7%)
CA 1		278 (24.8%)
CA 2		218 (19.4%)
CA 3		146 (13.0%)
CA 4+		139 (12.4%)
Practicing Anesthesiologist		75 (6.7%)
First-Generation, N (%)*		745 (66.4)
Loan Burden, N (%)		
\$300k+		363 (34.3%)
\$200,001-\$300k		301 (28.5%)
\$100,001-\$200k		200 (18.9%)
\$50,001-\$100k		37 (3.5%)
<\$50k		156 (14.8%)
Household Income, N (%)		
<\$45k		12 (1.1%)
\$45,001-\$80k		556 (49.6%)
\$80,001-\$150k		322 (28.7%)
\$150,001-\$400k		191 (17.0%)
\$400k+		41 (3.7%)
Moonlighting Total %, Hours per Week		248 (23.6%), 8.6 (±8.3)

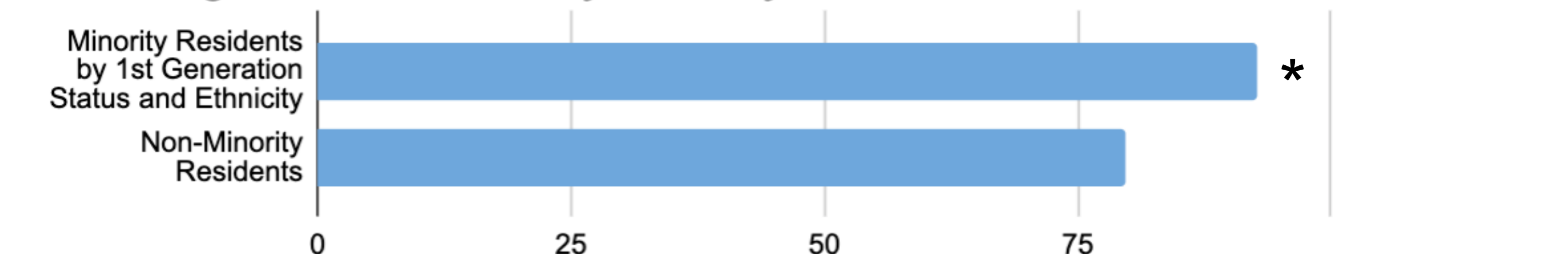
Conclusion and Future Directions

First-generation and minority residents in anesthesia have higher loan burdens that differentially impact their career and life decisions. Significant differences were noticed in the influence on job choice, which can contribute to the reduced number of minorities in academic centers. To increase equity and retention in anesthesia, academic centers across the country should evaluate areas to minimize the impact of economic burden on residents from minority groups to increase diversity, inclusion, and equity.

Loan Burden Impact



% of High Loan Burden by Minority Status



Minority groups recognized as US minority groups (African American, Hispanic, Native American) and 1st Generation as 1st Generation to complete medical school.

* Indicates statistical significance of p-value <0.05

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