

# Associations Between Family Medicine Residency Applicants' Debt Concern and Their Perception of Virtual Residency Interviews

Srilakshmi P. Vankina, BA | Radhika Laddha, BS | Alison N. Huffstetler, MD

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## Abstract

**Introduction:** Since the shift to virtual residency interviews following the COVID-19 pandemic and the initial 2021 and 2022 endorsement from the Accreditation Council for Graduate Medical Education, applicants and programs have been weighing the benefits and disadvantages of this transition. This study examines the impact of debt concern among family medicine residency applicants and their likelihood of (1) accepting virtual interview offers and (2) recommending the digital format for future application cycles.

**Methods:** Using responses from the American Academy of Family Physicians 2023 Medical Student Education Survey, we applied descriptive bivariate analysis and rapid cycle thematic evaluation to explore associations between 2023 family medicine residency applicants' debt concern and their perception of digital residency interviews.

**Results:** A majority of our study sample (86%) had some level of debt concern. A majority (88.8%) also noted that most of their interviews were virtual. Regardless of debt concern, most students (87.4%) indicated that they accepted offers for virtual interviews that they otherwise may not have accepted if travel time and expenses were involved. Furthermore, most students (87.1%) recommended a virtual component to future residency interviews.

**Conclusion:** Contrary to our expectations, there was no association between concern for debt and preference for virtual interviews. Most candidates preferred the virtual setting, stating that they were more likely to accept virtual interview offers, and recommended this format for future cycles.

## Introduction

Following recommendations from the Association of American Medical Colleges (AAMC) during the COVID-19 pandemic, graduate medical education (GME) residency programs transitioned to virtual interviews for the 2020-2021 application cycle.<sup>1</sup> Since then, studies have highlighted benefits including time efficiency and cost savings, alongside barriers such as technological access.<sup>2,3</sup> Given the high cost of American medical education, interview expenses are a significant challenge for applicants.<sup>4,5</sup> Although traditional interview costs vary, digital formats have helped reduce some financial burdens.<sup>6-10</sup> Nonetheless, there are limited data linking

medical students' debt concern with their experiences of interview formats. We hypothesized students with higher debt concerns would favor virtual interview offers and recommend them for future cycles.

## Methods

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The American Academy of Family Physicians (AAFP) Institutional Review Board determined this study to be exempt from review. Using quantitative and qualitative responses from the AAFP 2023 Medical Student Education Survey, we explored associations between applicants' debt concern and perception of digital residency interviews.<sup>11</sup> The AAFP medical education team compiled a 50-item survey through an inductive process with the goals of (1) examining students' perspectives on family medicine and the AAFP, and (2) identifying ways to better help applicants navigate the residency Match process. The survey was emailed to all 2023 AAFP student members with valid email addresses. If there was no response, two follow-up reminders were sent via a modified Dillman method.<sup>12</sup> In addition to demographic questions, the survey covered several topics: Family Medicine Attitudes Questionnaire (FMAQ), AAFP membership and resources, specialty choice, student debt, the match process, and student needs. We focused our study sample on those who applied to match in 2023 and answered questions relating to personal debt and virtual interviews, as recategorized in Table 1. We compared our study sample to the demographics of overall 2023 ERAS applicants using  $\chi^2$  goodness-of-fit test. We analyzed relationships between applicants' debt concern and perception of virtual interview formats using descriptive bivariate analysis. Through rapid cycle thematic evaluation, one reviewer examined each open-ended response and categorized them based on evolving themes related to financial barriers and interview formats. Two to three rounds of review ensured consistency and alignment with these themes.

## Results

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The survey was emailed to 20,585 AAFP student members with a 6.0% response rate, resulting in 1,225 replies. Of the total respondents, 294 participated in the 2023 match. After omitting 32 "not applicable or no student debt" responses for Question I. and 20 "do not know or not applicable" responses for Question II, our final sample size of 239 only included those that answered the study's questions of interest. When comparing our study population to the demographics of the 42,908 overall ERAS applicants in 2023, our sample had a smaller proportion of male applicants (31.4% vs 48.9%,  $P=.051$ ), smaller proportion of Hispanic applicants (0.9% vs 11.3%,  $P=0.003$ ), greater proportion of applicants who prefer to self-describe their ethnicity (10.4% vs. 2.1%,  $P=.019$ ), and greater representation from urban areas (48.1% vs 28.3%,  $P=.023$ , Table 2).<sup>13</sup> A majority of our study sample (86%) had some level of debt concern (Question I categorized as slightly, somewhat, or moderately impacts), and most (88.8%) also noted that a majority of their interviews were virtual.

Contrary to expectations, there was no association between debt concern and digital interview preference. Most candidates preferred the virtual format. Regardless of debt concern, most students (87.4%) accepted virtual interview offers that they may not have otherwise due to time and expenses (Figure 1). Additionally, 87.1% recommended a virtual component to future residency interviews. Covariates of sex ( $P=.006$ ) and MD/DO degree ( $P=.031$ ) were associated interview format preferences, while race ( $P=.443$ ) was not. While most accepted virtual interviews, 64.8% also highlighted the importance of visiting programs of interest in-person. Several applicants provided free-response narrative feedback related to debt impacts on career considerations (Table 3). Students described the financial burdens of medical training and how it limited their ability to apply and interview widely. Some appreciated how digital residency interviews reduced financial barriers and noted that in-person second look events were also helpful.

## Conclusions

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Irrespective of debt concern, virtual residency interview formats are important to students and offer more flexibility within an already expensive and time-consuming process.<sup>14-18</sup> This study suggests that factors beyond medical school debt alone may influence applicants' preference for and recommendation of virtual interviews.

Existing literature supports our study's narrative feedback, citing cost alleviation, time efficiency, accessibility, and equity as benefits of virtual interviews.<sup>19-26</sup> The pervasive fear of not matching also likely plays a role, as online formats offer more feasibility, leading to increased applications.<sup>27-30</sup> However, despite reduced costs and application inflation with digital interviews, our data highlight that the financial burden of medical education still limits how broadly applicants apply and interview.

Programs have enhanced virtual interview days with more social engagement, but applicants do still value in-person second look days before finalizing their rank lists. This suggests that students are cognizant of program fit and find in-person days beneficial for decision-making.<sup>31-32</sup> However, unless residency programs standardize this process, expand financial accessibility, and ensure that attendance will not impact rank orders, inequity remains.<sup>33-37</sup>

Our study has limitations, including a low survey response rate resulting in an underwhelming sample size, with some significant demographic differences compared to overall ERAS applicants. Although varied, most email survey response rates are about 25%, possibly influenced by factors such as survey length and postpandemic survey fatigue.<sup>38-40</sup> AAFP membership trends also help contextualize this sample. Although many students obtain AAFP membership for a variety of resources, internal tracking show that 11%-17% of student members go on to become resident members. Additionally, *debt concern* may not accurately reflect financial stressors and does not account for actual *debt burden*. Variations in debt levels, generational and cultural wealth, and first-generation medical student status, may influence debt perception and residency decisions.<sup>41-44</sup>

Future studies should better quantify debt burden and incorporate more narrative feedback to understand interview preferences. Residency program directors should weigh applicants' concerns and preferences in an overburdened application process, while prioritizing equity throughout.

## Tables and Figures

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**Table 1. Recategorized Survey Questions/Answers of Interest**

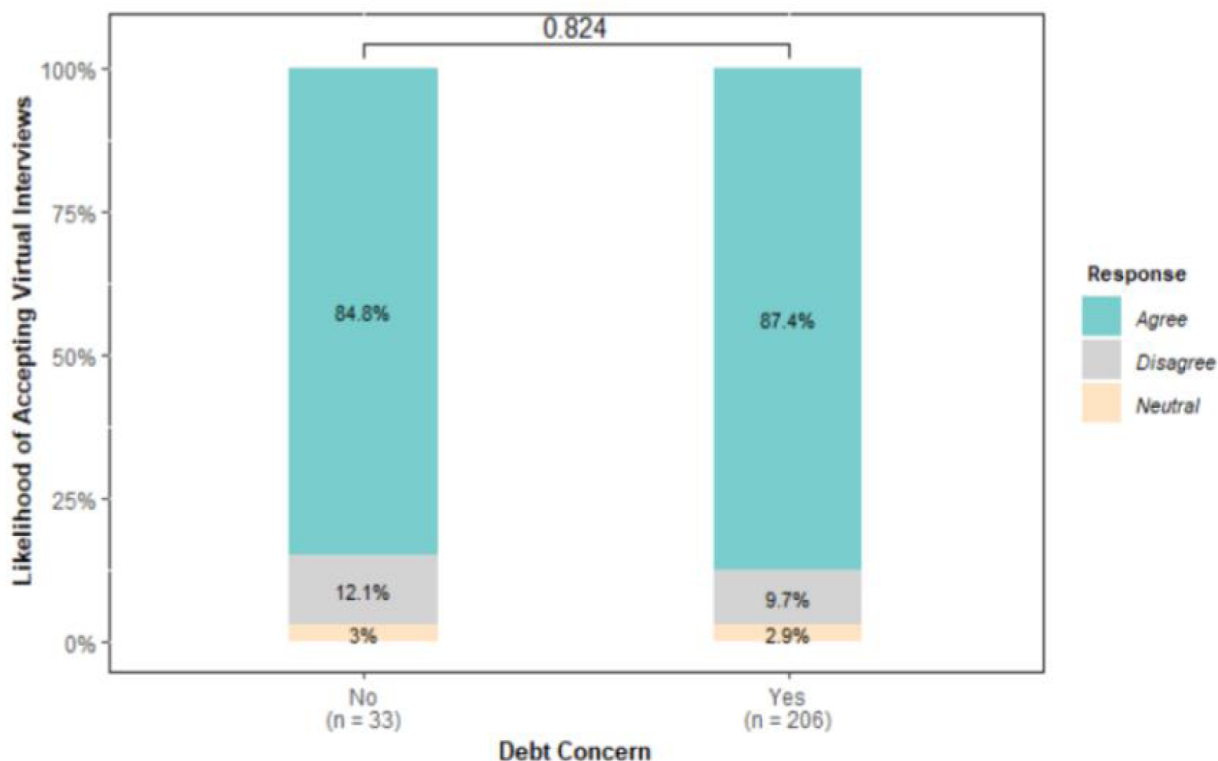
Question	Survey answer choices	Recategorized answer choices
I. How much does student debt impact your career considerations?	<ul style="list-style-type: none"> <li>• Moderately impacts</li> <li>• Somewhat impacts</li> <li>• Slightly impacts</li> <li>• Not at all impacts</li> <li>• Not applicable/No student debt</li> </ul>	<ul style="list-style-type: none"> <li>• Yes, debt concern</li> <li>• No debt concern</li> <li>• OMITTED Not applicable/No student debt</li> </ul>
II. I accepted offers for virtual interviews that I may not have accepted if travel time and expenses were involved	<ul style="list-style-type: none"> <li>• Strongly agree</li> <li>• Agree</li> <li>• Neutral</li> <li>• Disagree</li> <li>• Strongly disagree</li> <li>• Do not know/Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Agree</li> <li>• Neutral</li> <li>• Disagree</li> <li>• OMITTED Not applicable/No student debt</li> </ul>
III. Based on your experience this year, what would you recommend for future residency interview options?	<ol style="list-style-type: none"> <li>1. Interviews should only be conducted virtually for all candidates</li> <li>2. Interviews should only be conducted in-person for all candidates</li> <li>3. Interviews should be offered both virtually and in-person</li> <li>4. Other options should be offered (please specify)</li> </ol>	N/A

**Table 2. Demographic Characteristics of Participants**

Demographic type	Demographic	Survey respondents who applied to 2023 Match, n	%	Applicants to 2023 ERAS main residency match, n	%	<i>P</i> value
Birth sex	Male	74	31.4	18,663	48.9	.051*
	Female	152	64.4	18,112	50.4	.191
	Other	10	4.2	250	0.7	.114
Sexual orientation	Cisgender	226	95.8	32,235	87.0	.515
	Agender	1	0.4	0	0	.527
	Gender fluid	1	0.4	1,210	3.3	.132
	Gender queer	2	0.8	1,221	3.3	.217
	Nonbinary	2	0.8	0	0	.371
	Prefer to self-describe	1	0.4	205	0.6	.841
	Prefer not to say	3	1.3	2,180	5.9	.086
Race	White	156	65.3	18,297	49.4	.138
	Asian	52	21.8	11,495	31.0	.205
	Black or African American	19	7.9	3,141	8.5	.882
	Alaskan Native/American Indian	4	1.7	408	1.1	.720
	Native Hawaiian/Pacific Islander	1	0.4	106	0.3	.905
	Other	7	2.9	2,195	5.9	.312
	Prefer not to specify	13	5.4	1,409	3.8	.598
Ethnicity (Hispanic/Latinx)	Non-Hispanic/Latinx	197	88.7	32,071	86.6	.874
	Hispanic/Latinx	23	0.9	4,197	11.3	.003*
	Prefer to self-describe	2	10.4	783	2.1	.019*
Town Size (Urbanicity)	Rural: less than 2,500 people	37	15.9%	6,326	17.1	.835
	Suburban (Urban Cluster): between 2,500 to 50,000 people	84	36.1	19,159	51.7	.096
	Urban (Urbanized Area): more than 50,000 people	112	48.1	10,469	28.3	.023*
	Prefer not to specify	0	0%	1,097	3.0	.083

\**P* value significant at .05 level.

**Figure 1: Applicants' Likelihood of Accepting Virtual Interviews, by Debt Concern Response**



**Table 3. Narrative Data Related to Debt Impacts on Career Considerations From Open-Ended Prompting**

Question	Free-text responses
In what ways does student debt impact your career considerations? Please be specific	<p>"How I feel about my ability to do or seek out opportunities (eg, global health electives) due to the need to save money for applying for residency..."</p> <p>"Ability to apply to more programs and strongly consider where and how I would be living"</p> <p>"Due to student debt and very limited financial budget...or how many programs I can apply for residency. It is extremely challenging."</p> <p>While an average salary of 250,000 is well above what is considered well paid, my student debt is going to be \$320,000+. Even with going to school in a rural area, housing is \$1000+ and inflation has made food prices ridiculous. Those numbers don't even include the several thousand-dollar cost of boards, study resources, certain rotations, and residency applications.</p>
The AAFP welcomes any questions/comments you would like to add.	<p>"I really appreciated the ability to interview virtually to even the playing field on a financial level."</p> <p>"I would support virtual interviews with in-person second look events."</p> <p>"Many family medicine programs offered in-person visits after they submitted their rank list and I thought this was really tasteful and appreciated. It eliminates the inequity issue and allows us to meet them in person if we can afford to."</p> <p>"...I followed up virtual interviews with in-person visits for schools I was most interested in. I felt that was the best of both worlds because it was optimal financially while allowing me to get a good look at schools I most cared about to make rank decisions."</p> <p>"I do not think I can state how grateful I was for the options of virtual interviews for most programs. It saved me a lot of time, trouble, and money. Please advocate for keeping the option of virtual interviews permanently."</p>

Abbreviation: AAFP, American Academy of Family Physicians.

## Corresponding Author

Srilakshmi P. Vankina, BA

University of Minnesota Medical School, Minneapolis, MN

[vanki008@umn.edu](mailto:vanki008@umn.edu)

## Author Affiliations

Srilakshmi P. Vankina, BA - University of Minnesota Medical School, Minneapolis, MN

Radhika Laddha, BS - Robert Graham Center for Policy Studies in Family Medicine and Primary Care, Washington, DC

Alison N. Huffstetler, MD - Robert Graham Center for Policy Studies in Family Medicine and Primary Care, Washington, DC

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