

Promoting Social Justice

Universal versus Targeted Stipends: How to Reduce Inequity While Avoiding Stigma in Medical Education¹

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Medical education pathway programs address disparity in the medical workforce, particularly in rural areas, but inequity between program participants detracts from the goal. Universal, rather than targeted, stipends overcome this inequity. We report an evaluation of a universal stipend program for undergraduate students in a medical education pathway program. The stipend covers costs associated with preparing to take the MCAT exam. Findings reveal that students who are less advantaged, have lower income, and whose parents have less education, received more benefits from the stipend than those from advantaged backgrounds. The universal stipend design avoids stigmatizing recipients while it helps grow the medical education pathway.

Rural areas of Missouri are medically underserved due to disparity in the geographical distribution of the physician workforce. Examining core-based statistical areas for 2023, there are 8.3 physicians overall per 10,000 rural residents in Missouri but in metropolitan Missouri, there are 39.2 physicians per 10,000 residents. Examining primary care physicians (including family medicine/general practice, internal medicine, obstetrics and gynecology, and pediatric specialties) there are 5.1 physicians per 10,000 rural residents in Missouri and 12.4 physicians per 10,000 metropolitan residents in the state. For all other specialty care, rural Missouri has 3.9 physicians per 10,000 residents while metropolitan Missouri has 27.1. Considering leading causes of death like heart disease (cardiology specialty physicians: 0.55 per 10,000 rural vs. 1.53 metropolitan) or cancer (hematology and oncology: 0.52 per 10,000 rural vs. 0.95 metropolitan) shows additional disparity in the state's

physician workforce. This occurs despite the fact that rural populations are more likely to suffer from these and other conditions (Centers for Disease Control and Prevention 2023). The geographic distribution of physicians limits the health and specialty care rural residents can access, leading to worse health outcomes for rural populations (Missouri Healthcare Workforce Project 2023; U.S. Food and Drug Administration 2021).

Medical students from rural backgrounds are more likely to choose rural practice as physicians (Elma et al. 2022). In light of this, many states have adopted medical education pathway programs. These have the goals of recruiting and retaining rural students in the hope they will practice in rural communities upon completion of their training. This would help alleviate geographical medical workforce disparity and improve rural health outcomes (Edison-Ton et al. 2016; Quinn et al. 2011; Smucny et al. 2005; Wheat and Leeper 2021).

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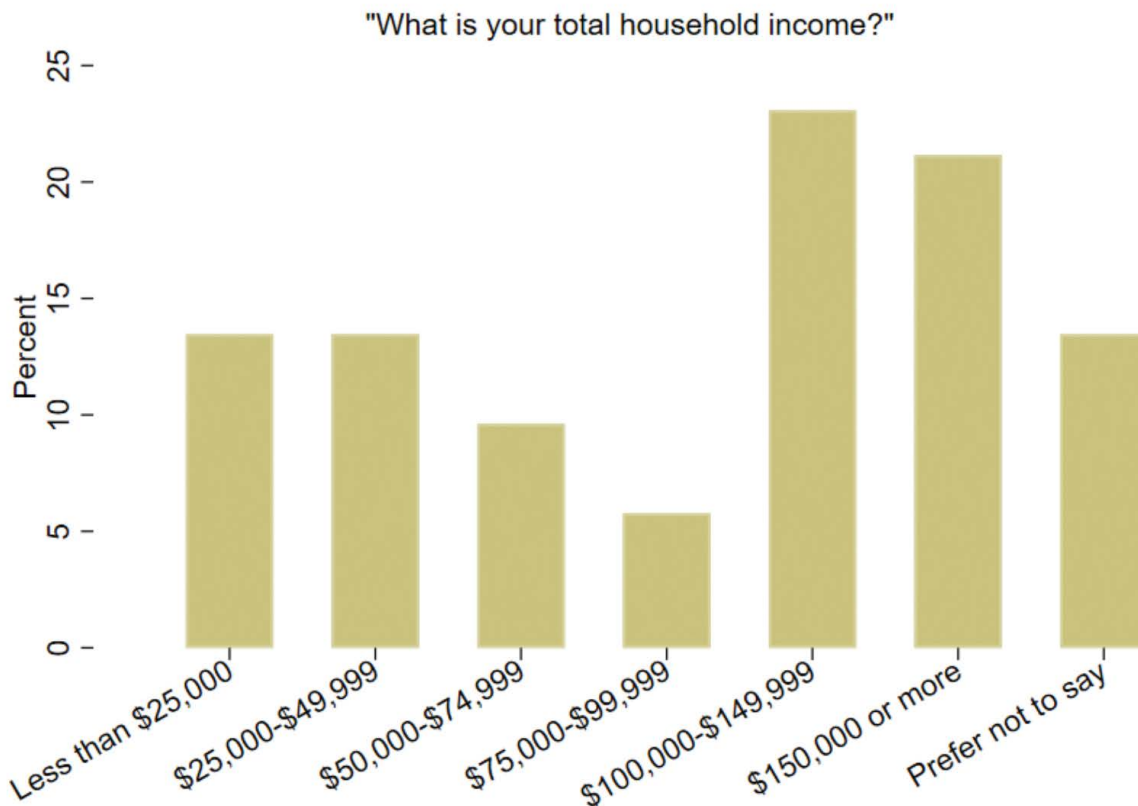
The Bryant Scholars program is part of the Rural Scholars Program (RSP) at the University of Missouri. This program was developed in 1995 to address physician workforce issues in Missouri (Quinn et al. 2011). The RSP offers pre-medical and medical education. Bryant Scholars enter as pre-medical students. They receive automatic acceptance into the School of Medicine and receive further intensive rural medicine programming if they meet the School of Medicine requirements.

Within a program designed to address rural medical workforce and outcome disparity, there is inequity between students' backgrounds. A primary program requirement for the Bryant Scholars is being from a rural background, but within that requirement exists diversity in social advantage and material resources. For example, 56% of Bryant Scholars reported being from a disadvantaged background, which means they grew up in an area that was medically underserved or had insufficient access to social, economic, and educational opportunities. These opportunities are crucial for prospective pre-medical students' applications to

medical school and are important for feelings of belonging for students from underrepresented backgrounds (Harris and Wise 2012; Urlings-Strop et al. 2017). Figure 1 shows the diverse household income background of Bryant Scholars, demonstrating income diversity in students' backgrounds. Alternatively, the overall composition of medical education draws highly from affluent parts of society (Youngclaus and Roskovensky 2018).

Students from less affluent backgrounds face challenges in medical education beyond those of peers. Conversations with Bryant Scholars program staff and administrators indicate achieving minimum University of Missouri School of Medicine MCAT scores has been a barrier for Bryant Scholars, and thus a barrier to decreasing disparity in the distribution of physicians in the state. Program goals of reducing medical disparity cannot be reached unless participants matriculate into and through medical school and into the medical workforce. To address this barrier, program administrators implemented a universal cash stipend for students to prepare for MCAT testing.

Figure 1. Household Income of Bryant Scholars



This Promoting Social Justice article examines a survey of Bryant Scholars to understand how a universal stipend for exam preparation influenced Medical College Admissions Test (MCAT) preparatory course-taking behavior. MCAT is a crucial step in medical students' journey into medical school and ultimately matriculation. Our research also considers the implications of reaching the goal using a universal stipend design. We found that the stipend helped disadvantaged students access MCAT preparation courses more than other students. This finding was also true relative to students' household incomes and family education. Participants with fewer resources gained more out of this stipend, demonstrating its usefulness in reducing inequity. This kind of universal stipend can be used to address inequity while minimizing the stigma associated with more targeted approaches.

Inequity in Medical Admissions

Achieving medical education requirements is more challenging for students with resource limitations: students receiving MCAT fee waivers earned lower scores than those who did not and students from low-resource universities earned lower scores than those from high-resource universities (Girotti et al. 2020). Nearly every part of the medical school admissions process favors those from higher affluence backgrounds (Christophers et al. 2022). The Association of American Medical Colleges (AAMC) reports that only about 20% of medical students come from the bottom three income quintiles in the United States (Youngclaus and Roskovensky 2018) and medical school attrition is nearly doubled among students from low SES backgrounds compared to those from high SES backgrounds (Brewer and Grbic 2010).

Medical education admissions have been designed in a way that excludes people who are seen as unworthy of the medical profession, particularly those who cannot, will not, or are unable to access a plethora of science curricula, preparatory resources and activities, and standardized testing (Butler 2010; Harris and Wise 2012; Stegers-Jeger 2018). The admissions requirements are rooted in an intentional move away from medical training at the turn of the 19th century in the United States, which was as much unempirical pseudoscience and duplicitous profit-seeking as it was the healing arts. Reforms for professionalizing medical education aimed

to legitimize more scientific approaches. At the same time, reforms created a system that effectively closed off access to medical training for low-affluence and non-white students (Butler 2010).

Graduate students face significant hidden costs during their education (Cantwell-Chavez and Rowland 2022) and the same is true for medical students. Medical education is a high-status environment filled with high-income professionals (Hindhede et al. 2020; Foreshaw and Al-Jawad 2022). Belonging in this rarefied atmosphere demands professional medical values of perfectionism and heroism (Bynum IV and Sukhera 2021; Cruess et al. 2019; Laughy et al. 2021), a commitment to self-sacrifice (Bellini et al. 2019; Jordan 2002), and the expenditure of financial resources (Goldberg 2019; Wray and McCall 2007).

The MCAT is designed to assess the science knowledge of students applying to medical school but serves as a barrier to admission. Despite revisions, including the addition of social science knowledge testing and limited free preparation (Weinstein et al. 2017), it remains a contributor to biases in the composition of the medical profession. The MCAT is the result of processes started in the late 19th century that were intended to improve medical education. Selection processes make biased assumptions about applicants and these continue to influence present inequities in medical education admissions (Butler 2010; Lucey and Saguil 2020). For example, less affluent students have difficulty preparing for the exam as MCAT preparation materials can cost thousands of dollars (Christophers et al. 2022).

Admission processes that demand quality candidates are rationally aimed at producing quality physicians (Schwartzstein 2020). The goal is to produce physicians who will be competent practitioners. However, the reality of social inequity is that well-resourced candidates with strong social networks and a history of planning for medical education will face fewer challenges (Butler 2010). In addition to material challenges, students from underrepresented backgrounds face other challenges, such as the imposter syndrome (Kokavec et al. 2022), fears of, and the reality of, identity-based marginalization (Dyster 2017), and a self-image that cannot see oneself as a physician (Greenhalgh et al. 2004).

The structure of social inequity influences who meets definitions of quality. This is unfair to students who never had opportunities to have the same experiences as more affluent students. It is also detrimental

to medical pipeline programmatic goals, the quality of the medical profession at large, and a just workforce distribution (Fenton et al. 2016). Medical education programs that reduce disparity in the medical workforce struggle with the challenges of how to influence candidates' life experiences prior to their application to medical school. However, with its undergraduate component, programs like the Rural Scholars Program can influence undergraduate experiences before students apply to medical school.

The Program at Hand

While the Rural Scholars Program and the Bryant Scholars program component are concerned with improving medical workforce disparity in Missouri, they cannot do so unless students enter medical school and become physicians. Inequity created a need to equalize MCAT preparation for those who are disadvantaged relative to affluent participants. Otherwise, these programs risked recreating inequity along lines of disadvantage.

To reduce barriers to admission to medical school that stem from MCAT scores, administrators of the Bryant Scholars program implemented a universal cash stipend for Bryant Scholar students in the year before their MCAT, starting in 2018. The rationale of the universal design was to avoid singling out students from low-resource backgrounds. They understood that such a design would be more expensive than a means-tested program but chose to move forward. Stipend amounts have varied between \$2,000 and \$2,500 depending on funding availability. Students were instructed that stipends were to be used for MCAT preparation courses and materials.

A universal cash stipend avoids pitfalls that plague other kinds of incentive structures. The administrative costs of cash transfers, compared to in-kind or reimbursement payments, are low because the administrative task of transferring cash to all accounts is simple (Slater 2011; Sun et al. 2021). Universal disbursement avoids the continuities that deny resources to those who need them most (Barnett 2010). They are relatively free of administrative burden and remove bias (Walsh et al. 2023). They also avoid the stigma associated with means-tested subsidies (Bolton et al. 2022; Kalnitsky 2016). At the same time, a universal cash stipend has benefits; it is also more costly than targeted assistance in terms of dollars and cents. In terms of destigmatizing, however, it has social benefits (Bergstrom and Dodds 2021; Slater 2011).

Near the expiration of its prior grant funding, the Rural Scholars Program contracted with us to develop and analyze a survey of Bryant Scholars and examine stipend use. The Bryant Scholars survey reported here was one of four surveys in an overall RTTP evaluation. We performed survey development and analytical work while program staff performed survey distribution to all active Bryant Scholars. The survey was distributed digitally using Qualtrics' survey platform. The goal of the survey was to evaluate the stipend in order to understand its benefits given its relatively high costs compared to a more targeted program. At the time of writing, new funding for the universal stipend has been secured and the program continues.

Findings

The survey received 51 responses from 81 Bryant Scholars during the time of survey administration (March 6 to April 7, 2023) for a response rate of 63%. All Bryant Scholars received a stipend so the effect of receipt compared to non-receipt cannot be compared, but examining reported MCAT preparatory behavior between different kinds of students reveals how the stipend addresses resource inequities among students. Students' responses are analyzed for the question "Do you think you would have taken an MCAT preparatory course even if you had not received a Bryant Scholars Stipend?" (1 = Definitely yes, 2 = Probably yes, 3 = Might or might not, 4 = Probably no, 5 = Definitely no). Note that a higher number indicates a lower likelihood of taking MCAT preparatory courses absent the stipend.

We first examine self-reported disadvantage (growing up in an area that was medically underserved or had insufficient access to social, economic, and educational opportunities), comparing those who reported a disadvantaged background to the responses of students who reported they did not have a disadvantaged background, or who were not sure or who indicated they preferred not to answer. Those who reported they were disadvantaged reported a mean of about 4.0, which is about one Likert point higher than others regarding whether the stipend enabled them to access MCAT prep courses. Comparing responses by family education shows that as family education increases, the likelihood of a stipend being the difference between taking and not taking MCAT prep courses decreases. Those with at least one

parent/caregiver with a master's degree were less likely to need the stipend to achieve the goal of taking the MCAT prep course.

Finally, MCAT prep course taken by family income is considered. Those with a family income of \$50,000 or less reported a mean Likert score of about 4.1, those between \$50,001 and \$100,000 reported 3.8, and those with greater than \$100,000 reported 2.5. This is a difference of about 1.6 Likert scale points between the highest and lowest income students for likelihood of taking MCAT preparatory courses absent the stipend. This reveals how the stipend assisted lower-affluence students.

Discussion

Within the Bryant Scholars MCAT preparation program, all students received a stipend for test preparation and survey results show that disadvantaged students received the most benefit. The stipend itself helped address inequity issues by providing greater benefits for disadvantaged students than others. This indicates that a universal stipend can reduce inequity by providing the greatest benefits to participants with the fewest resources while avoiding stigma that threatens other stipend designs (Bolton et al. 2022).

Medicine and medical education are high-status environments. Physicians are respected professionals whose expertise is highly valued and social deference is given to them. Physicians are responsible for patients and work within a culture of perfectionism within which vulnerability symbolizes an inability to meet expectations (Bynum IV and Sukhera 2021). Medical students are averse to seeking mental health care because of attitudes that mental health issues conflict with medical values of perfectionism (Sukhera et al. 2022). Similarly, the culture of perfection and a general stigma around receiving welfare, even if for targeted financial assistance, also exists.

Targeted stipends intended to address social inequity (Butler 2010; Christophers et al. 2022; Girotti et al. 2020) nevertheless create a difference between recipient students and their peers, thus accentuating impostor syndrome and hampering the development of professional self-identity (Greenhalgh et al. 2004; Kokavec et al. 2022). Universal stipends, on the other hand, prevent stigma by providing identical aid to all participants.

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