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Prevalence of Self-Disclosed Disability Among Medical Students in U.S. Allopathic Medical Schools

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Introduction

Studying the performance of medical students with disabilities requires a better understanding of the prevalence and categories of disabilities represented.^{1–4} It remains unclear how many medical students have disabilities; prior estimates are out-of-date and psychological, learning, and chronic health disabilities have not been evaluated.⁵ This study assessed the prevalence of all disabilities and the accommodations in use at allopathic medical schools in the United States.

Methods

Between December 2014 and February 2016 an electronic, web-based survey was sent to institutionally designated disability administrators at eligible allopathic medical schools who have a federally mandated duty to assist qualified students with disabilities. Eligible schools were identified through a registry maintained by the Association of American Medical Colleges (AAMC); new schools and those with probationary accreditation or on probation were excluded. Participation was maximized through direct emails to disability administrators, AAMC outreach to Students Affairs deans at eligible schools encouraging participation, and phone calls to non-responding schools after 6 and 9 months.

The survey was designed by experts in medical school disability administration based on provisions of the Americans with Disabilities Act and prior research. The survey was pilot tested by 5 schools and refined. The survey assessed the following domains: (1) total number

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Author Contributions: Drs. Meeks and Herzer had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Meeks.

Acquisition, analysis, or interpretation of data: Meeks, Herzer.

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of self-disclosed/registered students with disabilities receiving accommodations, (2) demographic characteristics of students with disabilities, (3) categories of disabilities, and (4) approved accommodations. Disability categories included: attention deficit hyperactivity disorder (ADHD), learning disability, psychological disability (adjustment disorder, anxiety disorder, obsessive-compulsive disorder, post-traumatic stress disorder, bipolar disorder, depressive disorder, eating disorder, cognitive disorder, autism spectrum disorder, schizophrenia, other psychotic disorders), deaf and hard of hearing, visual impairment, mobility disability, chronic health, and other functional impairment.

Survey results were linked to the AAMC's Organizational Characteristics Database, which provided additional information about regional, ownership, and financial characteristics of medical schools. Descriptive statistics were used to summarize survey results. The study was deemed exempt by the University of California, San Francisco Institutional Review Board because school-level data were analyzed in a de-identified manner.

Results

One hundred forty-five schools were identified; 12 were excluded. Of the 133 eligible schools, 91 completed the survey (68.4%) and 89 reported complete data and were included in the analysis. Most schools were located in the south (32.6%) and were publicly owned (57.3%) (Table). Responding schools were similar to non-responding schools on geographic region, public-versus-private ownership, community-based status, research intensity, and financial relationship with the parent university.

Respondents identified 1,547 students with disabilities (43/3% male), representing 2.7% of the total enrollment and ranging from 0% to 12%. Of these students, 97.7% received accommodations (Table). ADHD was the most common disability (33.7%), followed by learning disabilities (21.5%) and psychological disabilities (20.0%). Mobility and sensory disabilities were less common. School-based testing accommodations were most frequently used (97.8%); clinical accommodations were less frequent (Figure).

Discussion

This study identified a higher prevalence of disability among students in US allopathic medical schools—2.7%—than prior studies (0.3% to 0.6%).^{3,5} These results underscore the limitations of studying isolated subtypes of disabilities (ie, only mobility impairments), which may underestimate this population.⁶ The preponderance of students with ADHD, learning disabilities, and psychological disabilities suggests that these disability subtypes should be included in future research efforts, such as studies assessing the performance of appropriately accommodated students.

Schools reported incomplete student demographic data, precluding analysis. Also, students who did not self-disclose were not captured, nor was severity of disability—however, medical documentation is required for disability registration. Given the stigma surrounding psychological disabilities, it is plausible that these disabilities were underrepresented. Schools responding to the survey may not be representative of all allopathic medical schools and may not generalize to osteopathic schools. Finally, these prevalence estimates rely on

the accuracy of the data reported by schools; however, schools are under a federal mandate to document communication and decision-making regarding students with disabilities, supporting the accuracy of these data.

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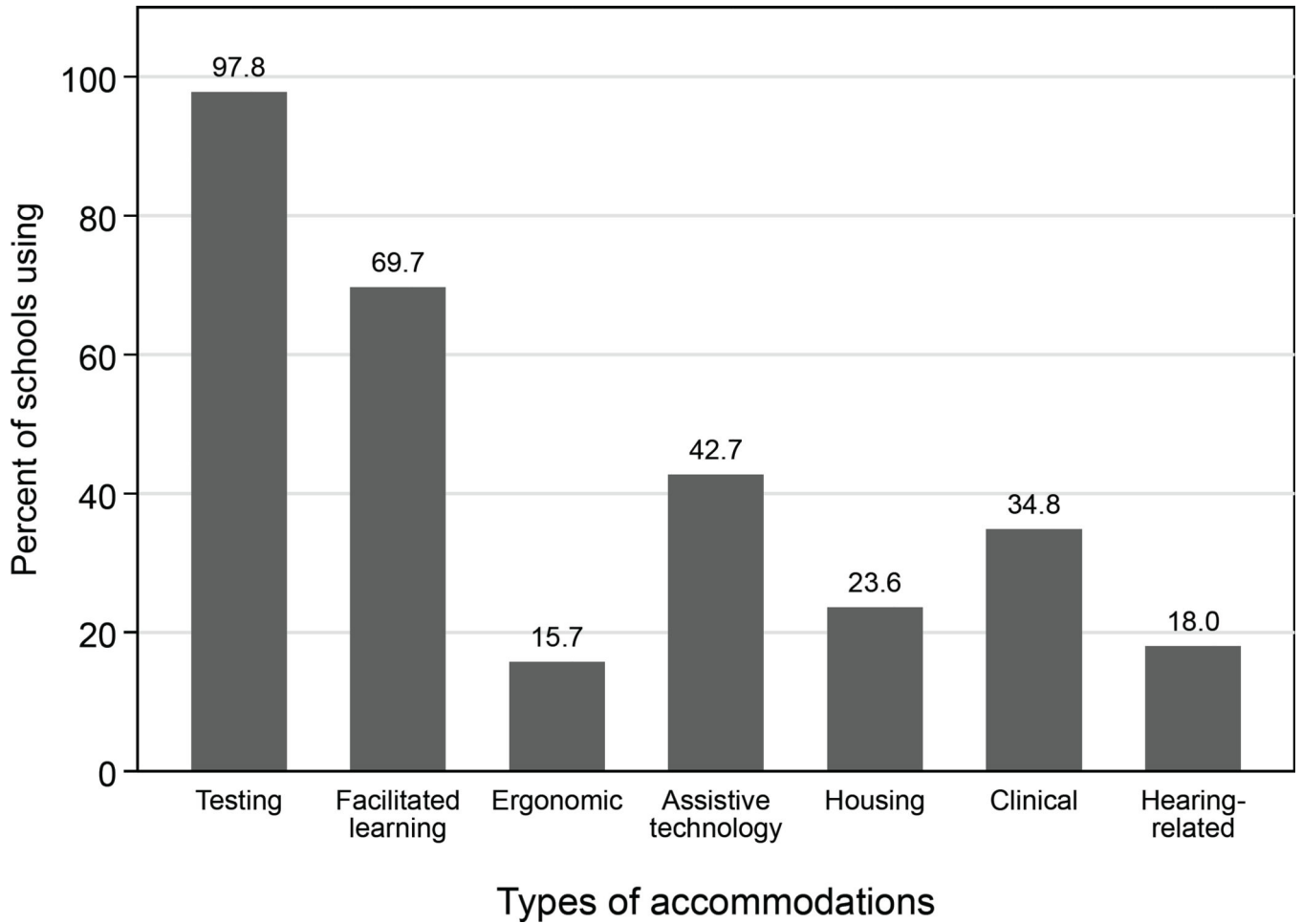


Figure 1. Types of Accommodations Used by US Allopathic Medical Schools

Testing refers to extra time used for school-based exams (including time and a half and double time), use of low distraction or private environments, and testing breaks. Facilitated learning refers to flexible attendance, note takers, Live Scribe Pen, recorded lectures, and preferential seating. Ergonomic refers to ergonomic evaluation and equipment. Assistive technology refers to textbooks in alternate formats, text-to-speech, speech-to-text computer programs. Housing refers to living accommodations such as single room housing, release from housing, assistance animal (e.g., therapy dogs), service animal, and reserved parking. Clinical refers to clinical placement, deferred clinical year, leave of absence, and release from overnight call. Hearing-related refers to use of transcriptionist, Communication Access Real-time Translation (CART), sign language interpreter, specialized phone, and specialized pager.

Table 1Characteristics of Students with Disabilities and Participating Medical Schools^a

Student characteristics	Students (N=1547)	
	No.	Percent
Students receiving accommodations	1512	97.7
Type of disability		
Attention Deficit Hyperactivity Disorder	522	33.7
Learning disability	333	21.5
Psychological disability ^b	310	20.0
Deaf or hard of hearing	34	2.2
Visual impairment	46	3.0
Mobility disability	39	2.5
Chronic health issue	202	13.1
Other functional impairment ^c	61	3.9
School characteristics ^d	Schools (N=89)	
Public ownership (vs. private ownership)	51	57.3
School region		
Central	20	22.5
Northeast	26	29.2
Southern	29	32.6
Western	14	15.7
Financially integrated with parent university (vs. other) ^e	75	84.3
Community-based school (vs. not) ^f	14	15.7

^aData are reported for 89 of 91 responding schools (97.8%) that reported complete data for disability type. Gender information (not shown in table) was complete for 86 of 91 responding schools (94.5%); among these schools, 648 (43.3%) students with disabilities were male and 849 were female (56.7%).

^bPsychological disabilities included the following: adjustment disorder, anxiety disorder, obsessive-compulsive disorder, post traumatic stress disorder, bipolar disorder, depression, eating disorder, cognitive disorder, schizophrenia or other psychotic disorder, and other psychological disability.

^cOther functional impairment included non-mental health related disorders that do not fall into one of the prescribed categories of disability, but that result in a functional impairment for the student and render them eligible for accommodations and protection under the Americans with Disabilities Act; an example would be loss of a limb resulting in the need for assistive technology but that does not cause mobility issues or chronic health issues.

^dSchool characteristics are from the Association of American Medical College's (AAMC) Organizational Characteristics Database.

^eFinancial integration with parent university refers to a medical school for which budget and financing are subject to parent university authorization. This is in comparison to free-standing medical schools or those that are financially autonomous.

^fA community-based medical school relies on community hospitals or clinical facilities to achieve their educational mission rather than a traditional academic medical center hospital and received full accreditation in 1972 or later (after the "community-based" movement in medical education).