



Disability, empathy and burnout in medical students

Department of international Cooperation for
Medical Education

Wu Han

There are many types of disabilities, such as those that affect a person's:

- Vision
- Movement
- Thinking
- Remembering
- Learning
- Communicating
- Hearing
- Mental health
- Social relationships



Key facts

- **An estimated 1.3 billion people experience significant disability. This represents 16% of the world's population, or 1 in 6 of us.**
- **Some persons with disabilities die up to 20 years earlier than those without disabilities.**
- **Persons with disabilities have twice the risk of developing conditions such as depression, asthma, diabetes, stroke, obesity or poor oral health.**
- **Persons with disabilities face many health inequities.**
- **Persons with disabilities find inaccessible and unaffordable transportation 15 times more difficult than for those without disabilities.**
- **Health inequities arise from unfair conditions faced by persons with disabilities, including stigma, discrimination, poverty, exclusion from education and employment, and barriers faced in the health system itself.**

physicians from different countries report concerns
about their ability to provide quality care for disabled patients



through the inclusion and support of medical students with
disabilities

Disability, program access, empathy and burnout in US medical students: A national study

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- ◆ Disability-related questions
- ◆ Burnout
- ◆ Empathy
- ◆ Personal-related measures
- ◆ Learning environment measures

TABLE 1 Characteristics of participants (N = 23 898)

Characteristic	Students with disabilities (N = 2438), N (%)	Students without disabilities (N = 21 460), N (%)	p value ^b
Overall prevalence	10.2%	89.8%	
Demographic characteristics			
Sex			.004
Women	1438 (59.0)	12 010 (56.0)	
Men	999 (41.0)	9442 (44.0)	
No. missing	1 (0.0)	8 (0.0)	
Age			<.001
Up to/including 26 years old	1804 (74.0)	18 318 (85.4)	
27 years or older	634 (26.0)	3142 (14.6)	
Sexual orientation			<.001
Heterosexual or straight	1887 (77.4)	19 360 (90.2)	
Lesbian, gay or bisexual	488 (20.0)	1797 (8.4)	
No. missing	63 (2.6)	303 (1.4)	
Race/ethnicity			<.001
Underrepresented in medicine ^a	559 (22.9)	3916 (18.2)	
Non-underrepresented in medicine	1804 (75.7)	17 269 (80.5)	
No. missing	34 (1.4)	275 (1.3)	
Cohort year			<.001
2019 cohort	1190 (48.8)	11 293 (52.6)	
2020 cohort	1248 (51.2)	10 167 (47.4)	
Disability-related characteristics			
Disability type			
ADHD	1401 (57.5)		
Chronic health disability	466 (19.1)		
Deaf or hard of hearing	75 (3.1)		
Learning disability	198 (8.1)		
Mobility disability	53 (2.2)		
Psychological disability	543 (22.3)		
Visual disability	94 (3.9)		
Other	128 (5.3)		
Program access: Accommodation or other			
Medical school provided accommodations	1215 (49.8)		
I have not requested accommodations because I feel I do not need accommodations	824 (33.8)		

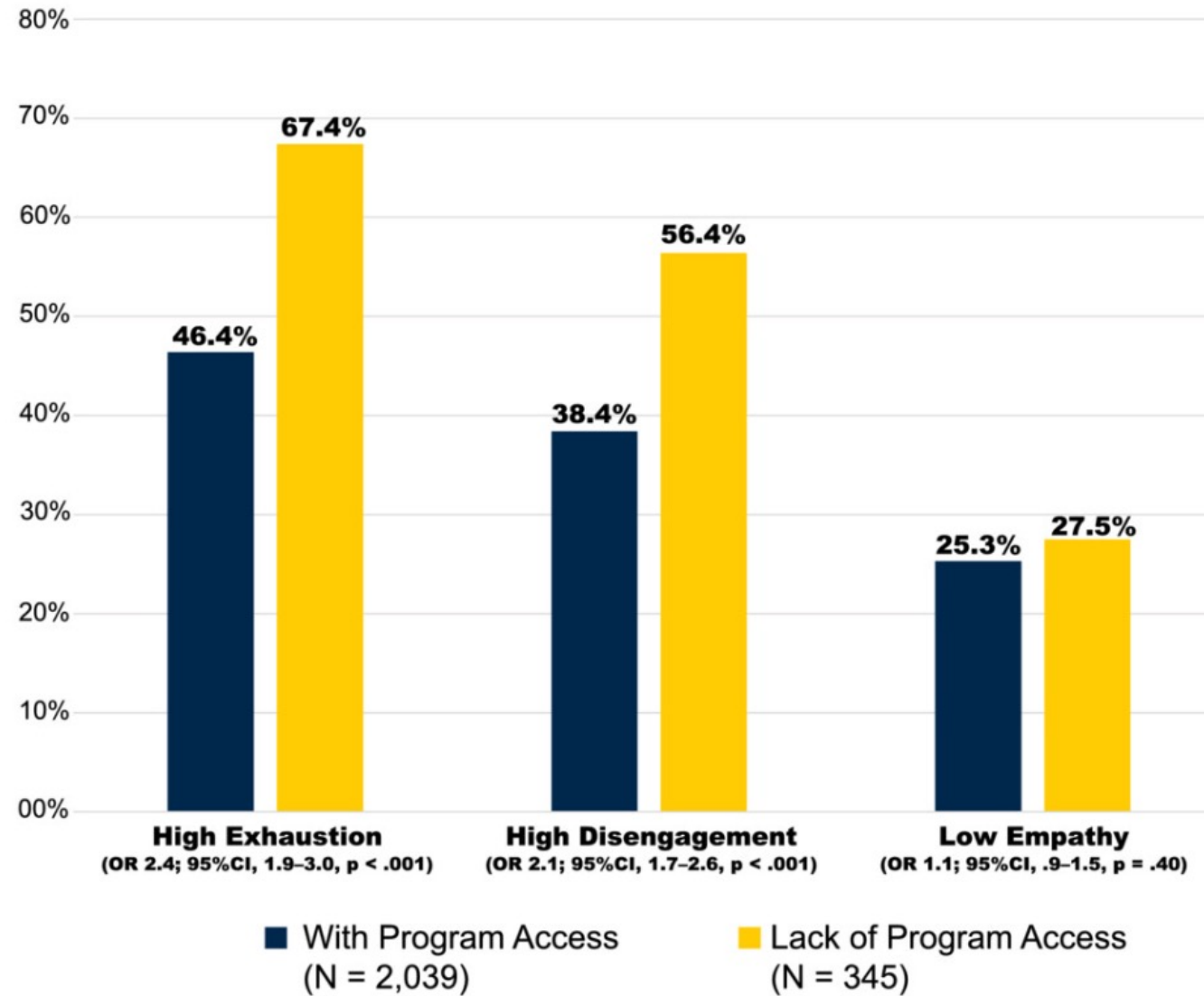
TABLE 2 Multivariable models of burnout and empathy among medical students with and without disabilities

Variable	High exhaustion		High disengagement		Low empathy	
	OR (95% CI)	p value	OR (95% CI)	p value	OR (95% CI)	p value
<i>Presence of disabilities</i>						
Students without disabilities	1 [Reference]	N.A.	1 [Reference]	N.A.	1 [Reference]	N.A.
Students with disabilities	1.60 (1.43–1.79)	<.001	1.11 (1.00–1.24)	.047	0.74 (0.66–0.82)	<.001
<i>Demographic characteristics</i>						
Men	1 [Reference]	N.A.	1 [Reference]	N.A.	1 [Reference]	N.A.
Women	1.63 (1.52–1.75)	<.001	0.64 (0.59–0.68)	<.001	0.48 (0.45–0.51)	<.001
Heterosexual or straight	1 [Reference]	N.A.	1 [Reference]	N.A.	1 [Reference]	N.A.
Lesbian, gay or bisexual	1.24 (1.11–1.38)	<.001	1.13 (1.01–1.16)	.03	0.81 (0.73–0.91)	<.001
Up to 26 years old	1 [Reference]	N.A.	1 [Reference]	N.A.	1 [Reference]	N.A.
27 years or older	0.92 (0.83–1.01)	.09	0.77 (0.70–0.85)	<.001	0.88 (0.81–0.96)	.004
Non-underrepresented in medicine	1 [Reference]	N.A.	1 [Reference]	N.A.	1 [Reference]	N.A.
Underrepresented in medicine ^a	1.23 (1.16–1.38)	<.001	0.89 (0.81–0.96)	<.001	0.81 (0.74–0.87)	<.001
2019 cohort	1 [Reference]	N.A.	1 [Reference]	N.A.	1 [Reference]	N.A.
2020 cohort	0.77 (0.72–0.83)	<.001	0.97 (0.91–1.04)	.40	0.92 (0.86–0.98)	.01
<i>Personal-related measures (for each 1-point increase)</i>						
TFA tolerance for ambiguity	0.94 (0.94–0.95)	<.001	0.97 (0.96–0.97)	<.001	0.98 (0.98–0.99)	<.001
LASA-6 perceived quality of life	0.90 (0.89–0.90)	<.001	0.94 (0.93–0.94)	<.001	0.99 (0.99–0.994)	.002
<i>Learning environment measures (for each 1-point increase)</i>						
MSLES faculty interactions	1.00 (0.99–1.02)	.44	0.97 (0.95–0.98)	<.001	0.94 (0.93–0.95)	<.001
MSLES student interactions	1.01 (1.00–1.03)	.06	0.98 (0.97–0.996)	<.001	0.98 (0.97–0.99)	<.001
MSLES emotional climate	0.84 (0.83–0.86)	<.001	0.81 (0.79–0.82)	<.001	0.97 (0.95–.098)	<.001
<i>Burnout^b</i>						
High exhaustion (no)	N.A.	N.A.	N.A.	N.A.	1 [Reference]	N.A.
High exhaustion (yes)	N.A.	N.A.	N.A.	N.A.	0.66 (0.61–0.72)	<.001
High disengagement (no)	N.A.	N.A.	N.A.	N.A.	1 [Reference]	N.A.
High disengagement (yes)	N.A.	N.A.	N.A.	N.A.	1.30 (1.20–1.40)	<.001

Abbreviations: LASA-6, 6-item Linear Analogue Self-Assessment Scale; MSLES, Medical School Learning Environment Survey; TFA, Tolerance for Ambiguity Scale.

^aUnderrepresented in medicine includes any US citizen or permanent resident who self-identified as one or more of the following race/ethnicity categories (alone or in combination with any other race/ethnicity category): American Indian or Alaska Native; Black or African American; Hispanic, Latino, or of Spanish Origin; or Native Hawaiian or Other Pacific Islander.

^bBurnout measures were only included as independent covariates in multivariable models for low empathy.



1.The study investigated the association between empathy, burnout, program access, and disability among medical students.

2.Disabled students were less likely to have low empathy compared to their peers without disabilities, despite experiencing high levels of burnout symptoms.

3.Program access played a crucial role in reducing burnout and disengagement among students with disabilities.

4.Disabled students with program access did not differ from students without disabilities in terms of high disengagement and reported preserved empathy.

5.Lived experience of disability may be a protective factor that increases empathy among medical students with disabilities.



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- ✓ Structural barriers, such as conflicts of interest, lack of expertise, and outdated disability disclosure systems, need to be addressed to support students with disabilities.
- ✓ Longitudinal studies are needed to explore the stability of empathy throughout medical school for students with disabilities.

Figure 1. Number Number of National, Public, and Private Special Needs Education Schools in Japan from 2013 to 2022

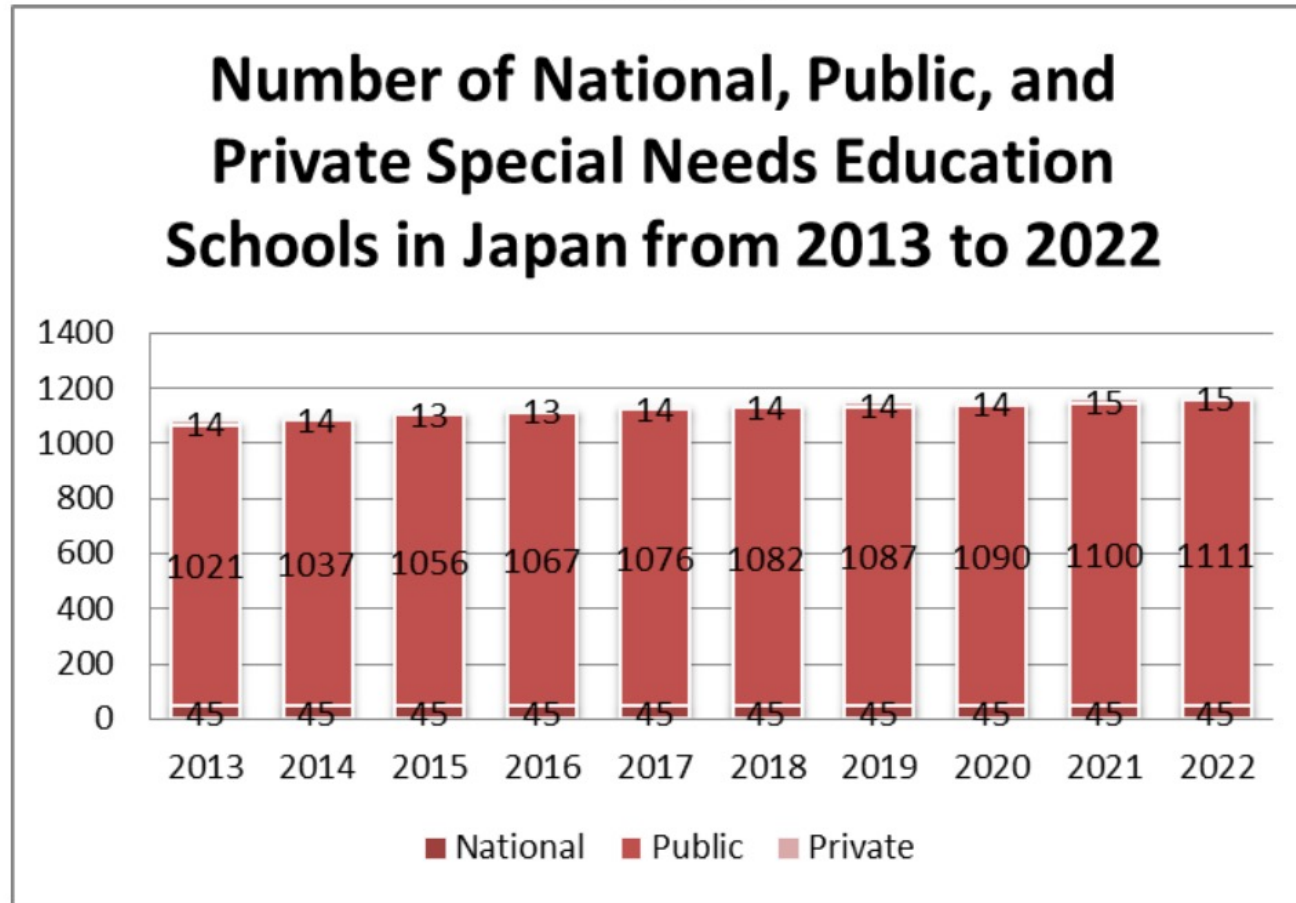


Table 1. Career paths of secondary school graduates with special needs.

Division		Graduates	Continuing Education	Enrollment in education and training institutions	Employed Person	People entering/visiting social welfare facilities	Others
Junior High School	total	10.491	10.322 (98,4%)	21 (0,2%)	4 (0,4%)	62 (0,6%)	82 (0,8%)
	Visual impairment	177	174 (98,3%)	-	-	1 (0,6%)	2 (1,1%)
	Hearing loss	402	400 (99,5%)	14 (0,18%)	3 (0,04%)	29 (0,4%)	55 (0,7%)
	Intellectual disability	7.881	7.780 (98,7%)	14 (0,18%)	3 (0,04%)	29 (0,4%)	55 (0,7%)
	Physical disability	1.698	1.657 (97,6%)	2 (0,1%)	-	2 (1,4%)	15 (0,9%)
	Weak	333	311 (93,4%)	5 (1,5%)	1 (0,3%)	8 (2,4%)	8 (2,4%)
Junior high school special support class		22.132	20.927 (94,6%)	429 (1,9%)	153 (0,7%)	623 (2,8%)	

Note. Adapted from MEXT (MEXT-JAPAN, 2018 (In Japanese))

Table 2. Career paths of high school graduates with special needs.

Division	Graduates	Continuing Education	Enrollment in education and training institutions	Employed Person	People entering/visiting social welfare facilities	Others
Total	21.657	427 (2,0%)	342 (1,6%)	6.760 (31,2%)	13.241 (61,1%)	887 (4,1%)
Visual impairment	290	90 (31,0%)	10 (3,4%)	47 (16,2%)	125 (43,1%)	18(6,2%)
Hearing loss	492	193 (39,2%)	20 (4,1%)	192 (39,0%)	68 (13,8%)	19 (3,9%)
Intellectual disability	18.668	76 (0,4%)	241 (1,3%)	6.338 (34,0%)	11.267 (60,4%)	746 (4,0%)
Physical disability	1.841	43 (2,3%)	47 (2,6%)	111 (6,0%)	1.575 (85,6)	65 (3,5%)
Weak	366	25 (6,8%)	24 (6,6%)	72 (19,7%)	206 (56,3%)	39 (10,7%)

Note. Adapted from MEXT (MEXT-JAPAN, 2018 (In Japanese))

THANK YOU !