

# Size of city, type of school, and applications to medical schools in Japan: Findings from a nationwide survey of high school guidance counselors

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## Background and Objectives

- Medical school remains popular in Japan, and medical school entrance exams are difficult to pass. Slowing economic growth and proportional increase in non-regular employment in Japan may have prompted an increase in the number of people wishing to pursue an economically stable career such as a doctor.
- Widening educational disparities in Japan make it imperative to examine the system and acceptance criteria for medical school entrance examinations, as most medical students will become doctors, and doctors are important human resources occupying a central part of social capital. Other countries have attempted to rectify educational disparities using criteria additional to academic achievement. Japan must adopt similar effective approach. We collected relevant information from high school guidance counselors to verify medical school entrance examinations.

## Methods

- We compiled a list of 1,746 high schools in Japan, based on two articles in weekly Japanese magazines that published numbers of students who were entering leading universities or medical schools from each high school. Cross-sectional questionnaires were mailed to guidance counselors in identified schools.
- Questionnaire items covered attributes of schools, respondents, and students who were taking university entrance examinations; the home environments of those students; and opinions regarding current medical school entrance exams. These items were based on our research and findings from a related international symposium.
- Pearson's chi-square test was used for the analyses.
- There were no applicable ethical considerations, and approval from the Hokkaido University Ethical Committee was deemed unnecessary.

## Example Survey Items

### Respondent characteristics:

Sex, age, position.

### School characteristics:

Public/private, number of students, post-graduation paths, Number of graduates going to medical schools in an average year.

### Disparity in test-taking opportunities:

What factors place students at an advantage in taking the test?  
Cases where students gave up on the test.

### Students' circumstances:

About what percentage of students attend preparatory and "cram" schools?  
What are their families' financial situations?  
About what percentage of students who are medical examination candidates have parents who are doctors?

### Students planning to attend medical school:

Are they well-qualified to become doctors?  
What career path guidance are they actually receiving?

### Disparity in test-taking opportunities:

What factors place students at an advantage in taking the test?  
Cases where students gave up on the test.

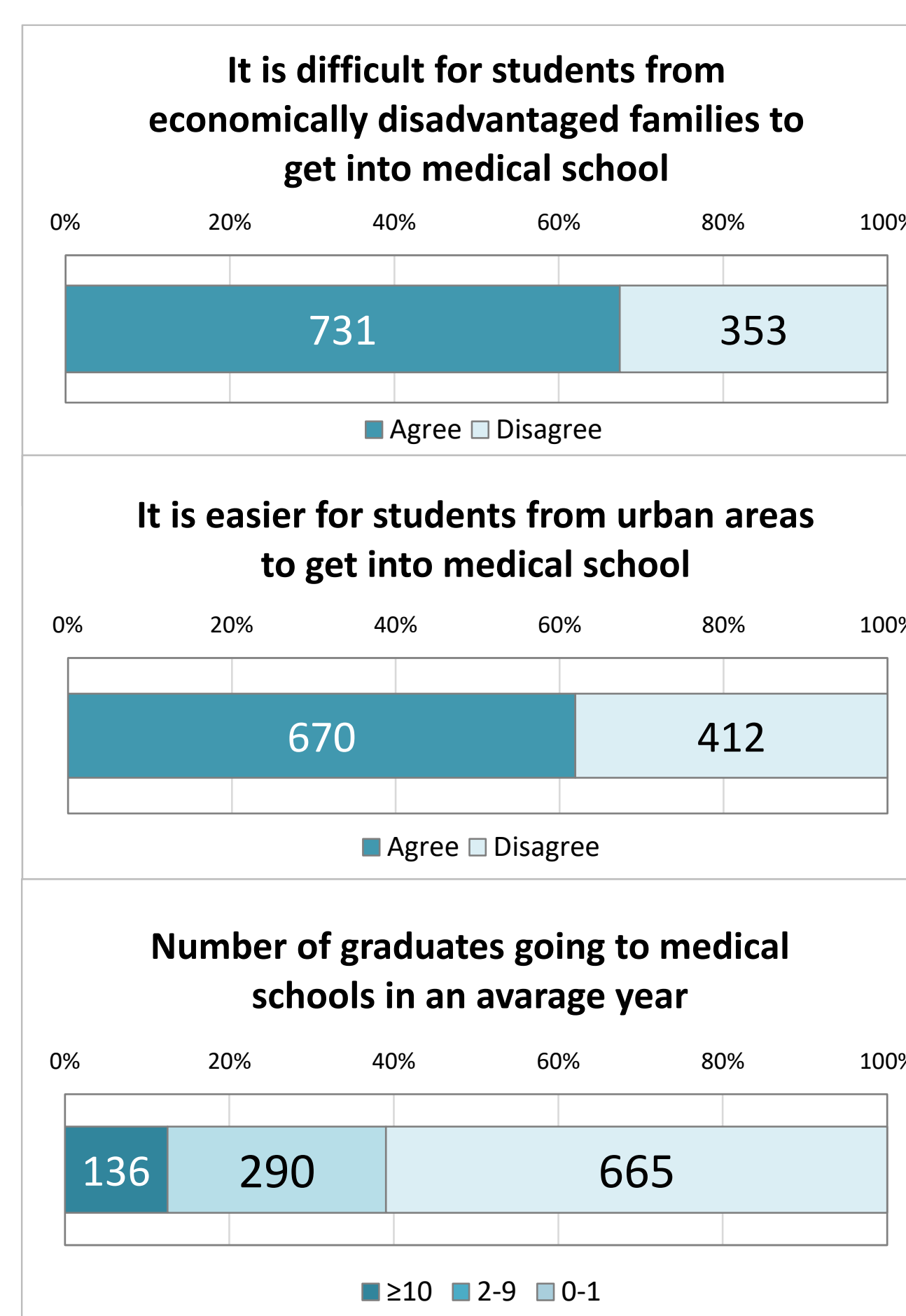
### Opinions about the medical school admission system:

What examination method is emphasized?  
Are there any influences with regard to regional reservations in a medical school?

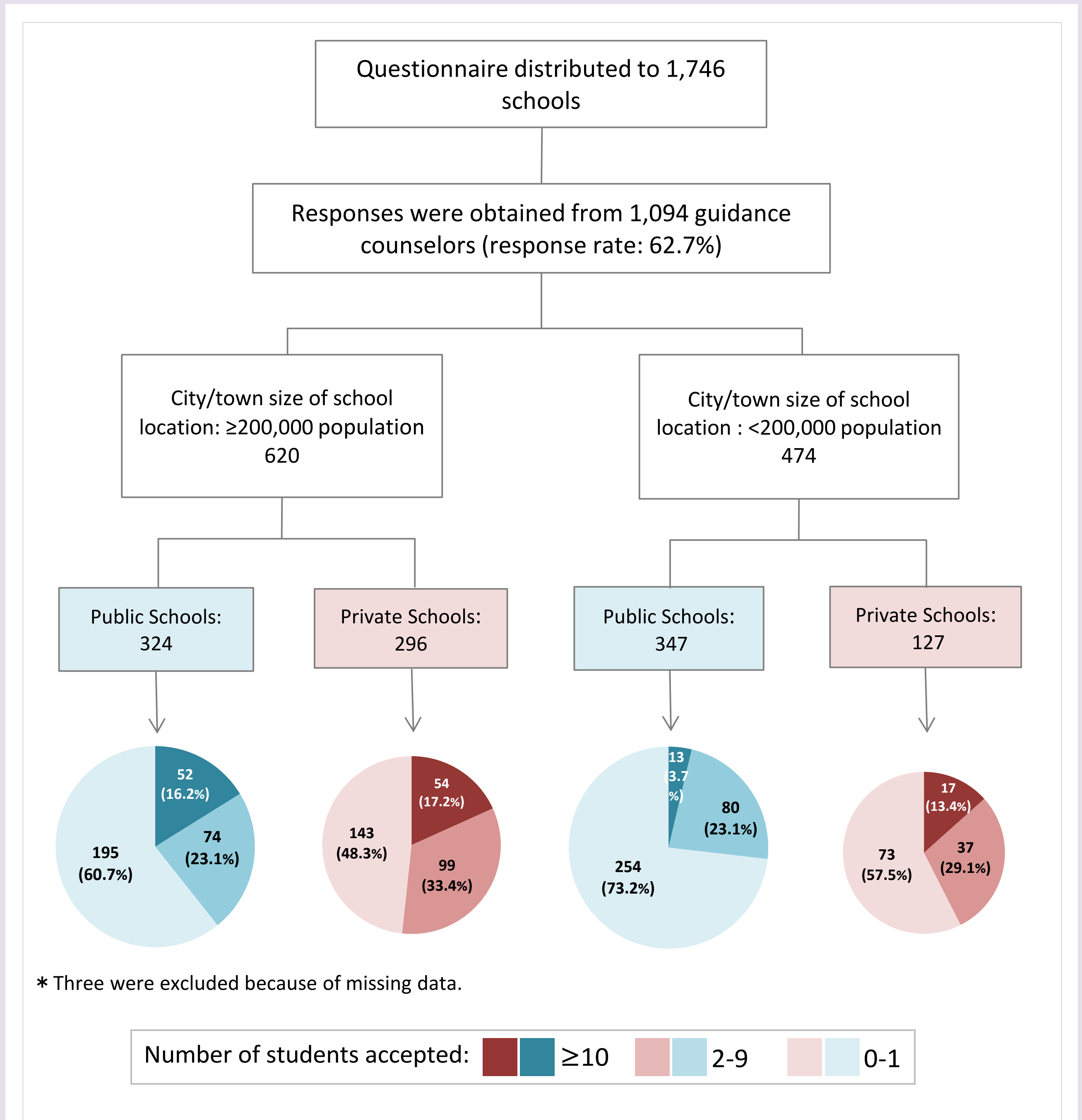
## Results

**Table 1 . Characteristics of high schools in which respondents' worked.**

Number of senior students	Mean±SD	Range
	267.8±112.4	(20–1,026)
Types of high school	n	%
National/Public	671	61.3
Private	423	38.7



**Figure 1. Aggregated results for the survey item regarding applications to medical school.**



**Figure 2. Size of city/town, type of school, and number of students accepted into medical schools in an average year.**

## Discussion

- Japan has a National Center Test for University Admission, which is an academic skills test taken by students nationwide. However, there is no common entrance examination for medical schools. Most medical schools in Japan evaluate students using a secondary academic skills test created independently by each school. These examinations generally rank applicants according to their score, rather than judging basic academic ability or aptitude. This means each university independently creates comparatively difficult exam questions.
- Applicants who have access to exam preparation specifically designed to help prepare for the academic skills questions likely to appear in each medical school's secondary examination are at an advantage in terms of doing well in the actual examination. High schools that provide such intensive forms of exam preparation are mainly private and integrated junior and senior high schools. There are also specialized preparatory schools for medical school applicants, most of which are located in large cities and have expensive tuition fees. Medical school tuition fees are also expensive, particularly for private universities. It may not be easy for a typical family to bear these costs.
- Therefore, it may be easier for children from financially secure families that live in large cities to get into medical school. This may also be connected to the uneven distribution of doctors in large cities, a problem for the Japanese medical system that has emerged in recent years. However, the veracity of this is yet to be proved.

## Conclusion

- Economic and regional disparities among high school students influence students' career decisions:
  - Many high school guidance counselors believed economic and regional disparities among high school students in Japan influence students' decisions to enter medical school. The majority also reported that wealthy, urban students had a clear advantage.
  - This analysis indicated that around two times more private high schools located in cities with a population over 200,000 people (most) had two or more students accepted into medical school than public high schools located in municipalities with a population of less than 200,000 people (least).
- The influence of educational disparities should be clarified:
  - For medical school entrance examinations to be valid, they must confirm whether a student possesses suitable academic ability. However, universities may be administering overly specialized aptitude tests to rank students, rather than assessing necessary abilities for entry into medical school. This selection method has low validity, particularly if it relates to specialized exam coaching that only students from certain backgrounds can receive.
  - Japan's contracting population makes it necessary to reconsider this system so that fewer students give up on applying to medical school or give up considering a career as a doctor for reasons other than their own abilities.

## COI

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