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PRELIMINARY REPORT

Medical students' impression of a generalist in Japan: A cross-sectional study

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Abstract

Background: Despite the increasing global demand, few medical students aspire to become generalists. To address this shortage, we investigated medical students' impressions of generalists in Japan.

Methods: This cross-sectional study used a web-based questionnaire from a previous study. The participants chose the impression of a generalist from four categories based on the previous report: family physician, hospital family physician, hospitalist, and general internal medicine.

Results: Medical students' impressions were as follows: family physicians (32%), hospitalists (28%), general internal medicine staff (20%), and hospital family physicians (18%). Students considered reasonable working hours, research opportunities, a clinical clerkship in generalist medicine, and information from university faculty as essential for making career choices.

Conclusions: The study demonstrated that the number of Japanese medical students who considered generalists to be family physicians/hospital family physicians and the number of those who considered generalists to be hospitalists/general internal medicine were almost equal. To increase the number of medical students who consider and choose to become generalists, understanding their impressions of generalist practice and their needs regarding work settings in that role is crucial.

KEYWORDS
career choice, continuing medical education, family medicine, medical education, medical students

1 | BACKGROUND

Population aging is a global issue, and generalists have played a key role in addressing it. Previous research has shown that regions with many generalists offer more appropriate care than those with a limited number.[1] The demand for generalists has been increasing worldwide, particularly in Japan. However, the number of generalists is insufficient. In 2011, the Ministry of Health, Labour, and Welfare established a review committee to consider the role of medical specialists.[2] The commission reported in 2013 that a doctor qualified in general medicine and practice is a generalist. In response to this report, the Japanese Medical Specialty Board decided to appoint a generalist as one of the specialists. Now, only 2% of residents aspire to become generalists.[3] Japan Primary Care Association defines "generalist" as a physician who does not specialize in a specific field, practices cross-organ medical care, takes an interest in patient

backgrounds, and is capable of adapting to community healthcare.[4] However, the actual "impression" of generalists among medical students and physicians in Japan is ambiguous. One of the reasons would be that the boundary between primary and secondary care in Japan is unclear as well as its role.[5] Generalist physicians in Japan work in both clinics and hospitals.[4] Therefore, for example, if a

TABLE 1 Characteristics of the participants.

	Item	Total	Interested in generalist	Not interested in generalist
n		119	87	32
Gender (%)	Female	65 (54.6)	50 (57.5)	15 (46.9)
	Male	54 (45.4)	37 (42.5)	17 (53.1)
Grade (%)	1	28 (23.5)	20 (23.0)	8 (25.0)
	2	28 (23.5)	20 (23.0)	8 (25.0)
	3	17 (14.3)	10 (11.5)	7 (21.9)
	4	32 (26.9)	28 (32.2)	4 (12.5)
	5	8 (6.7)	4 (4.6)	4 (12.5)
	6	6 (5.0)	5 (5.7)	1 (3.1)
Junior High School (%)	Private	48 (40.3)	40 (46.0)	8 (25.0)
	Public	69 (58.0)	45 (51.7)	24 (75.0)
	Unique	2 (1.7)	2 (2.3)	0 (0.0)
High School (%)	Private	59 (49.6)	48 (55.2)	11 (34.4)
	Public	58 (48.7)	38 (43.7)	20 (62.5)
	Unique	2 (1.7)	1 (1.1)	1 (3.1)
Admission status (%)	First	110 (92.4)	80 (92.0)	30 (93.8)
	Readmission	9 (7.6)	7 (8.0)	2 (6.2)
Admission category (%)	General	83 (69.7)	63 (72.4)	20 (62.5)
	Regional	28 (23.5)	18 (20.7)	10 (31.2)
	Unique	8 (6.7)	6 (6.9)	2 (6.2)
University (%)	Private	34 (28.6)	28 (32.2)	6 (18.8)
	Public	85 (71.4)	59 (67.8)	26 (81.2)
When decide a career (%)	J/H	62 (52.1)	46 (52.9)	16 (50.0)
	M1	15 (12.6)	8 (9.2)	7 (21.9)
	M2	11 (9.2)	11 (12.6)	0 (0.0)
	M3	6 (5.0)	4 (4.6)	2 (6.2)
	M4	7 (5.9)	6 (6.9)	1 (3.1)
	M6	3 (2.5)	2 (2.3)	1 (3.1)
	Undecided	15 (12.6)	10 (11.5)	5 (15.6)
Class of general practice (%)	Experienced	71 (59.7)	50 (57.5)	21 (65.6)
	Unexperienced	48 (40.3)	37 (42.5)	11 (34.4)
Clinical clerkship in general practice (%)	Experienced	29 (24.4)	19 (21.8)	10 (31.2)
	Unexperienced	90 (75.6)	68 (78.2)	22 (68.8)
Impression of generalists (%)	NA	3 (2.5)	2 (2.3)	1 (3.1)
	Hospitalist	33 (27.7)	23 (26.4)	10 (31.2)
	General Internal Medicine physician	24 (20.2)	21 (24.1)	3 (9.4)
	Hospital Family Physical	21 (17.6)	13 (14.9)	8 (25.0)
	Family physician	38 (31.9)	28 (32.2)	10 (31.2)
States (%)	NA	17 (14.3)	11 (12.6)	6 (18.8)
	Sp < Family physician	4 (3.4)	4 (4.6)	0 (0.0)
	Sp = Family physician	28 (23.5)	21 (24.1)	7 (21.9)
	Sp > Family physician	70 (58.8)	51 (58.6)	19 (59.4)

medical student who prefers to work in a clinic has an impression of general practice as a hospitalist, the student would not choose general practice for his/her career. Previous studies investigating the career plan of medical students targeted only those interested in family medicine or primary care in a community setting,[6] of which are only some aspects of generalist practice, not the whole.[7] Therefore, the research question of the study is "What types of impression do medical students have for general practice? and what factors come into play when considering general practice as a career?". This study aimed to explore Japanese medical students' impressions of generalists.

2 | METHODS

A 25-item web-based questionnaire was used in this cross-sectional study. It was based on a survey designed to measure UK medical students' attitudes toward their future careers and general practice.[8] It evaluates participant characteristics, including the clinical department they wish to join, how they perceive generalists, and other important and influential factors related to their career choices.[8] In Japan, where studies specifically focusing on generalists and career choices were scarce, references were drawn from studies conducted in the United Kingdom, where general practice is well established. Considering the various aspects of generalists in Japan compared to the UK, with diverse regional perceptions, the study targeted institutions with medical students from multiple universities. To enhance the questionnaire, a specific item was added to assess how participants perceive generalists. Adjustments were made to the response items based on the differences in postgraduate training systems by the research team. Regarding research consent, participants were informed in advance about the request to complete the questionnaire, and agreement to participate in the study was presumed upon completing the online questionnaire. Informed consent was obtained throughout the outlined process. The present survey was conducted between September and October 2022. Participants included medical student members of The Japan Medical Students Association and The International Federation of Medical Students' Association. The primary outcome was the proportion of medical students interested in becoming generalists. The study classified the impression of a generalist into four categories: family physician, hospital family physician, hospitalist, and general internal medicine, based on a previous report.[5] The previous study proposed three categories of generalists in Japan: family physician, hospital family physician, and hospitalist. Family physicians primarily offer outpatient care and house calls, playing a central role in community primary care. Hospital family physicians provide outpatient care, inpatient care, and house calls, practicing mainly in hospitals. Hospitalists practice in medium to large hospitals and provide outpatient and inpatient care. Hospitalists usually do not conduct house calls. In addition, because internists who offer outpatient and inpatient care are regarded as generalists in Japan, we added general internal medicine as another category. The first two categories were designated as the *Primary Care* (PC) group and the latter two as the *General Internal Medicine* (GIM) group.

This study compared the basic characteristics of medical students who aspired to be generalists and those who did not. In addition, a modified Poisson regression analysis was conducted to explore the association between the career choice of PC or GIM and important factors (job satisfaction, practice, atmosphere of department, professional status, career development, income potential, reasonable working hours, close relationship with patients, and research potential) or influence factors (clinical clerkship of general practice, academic physicians of Generalist, members of Generalist, other medical students, university tutors, culture of their medical schools, and current medico-political climate) described in the previous study.[8] The survey also included a free-comment section.

The study protocol followed the principles of the Declaration of Helsinki. It was reviewed and approved by the Ethics Committee of ABC (approval number: 2022-03). Informed consent was obtained from all study participants.

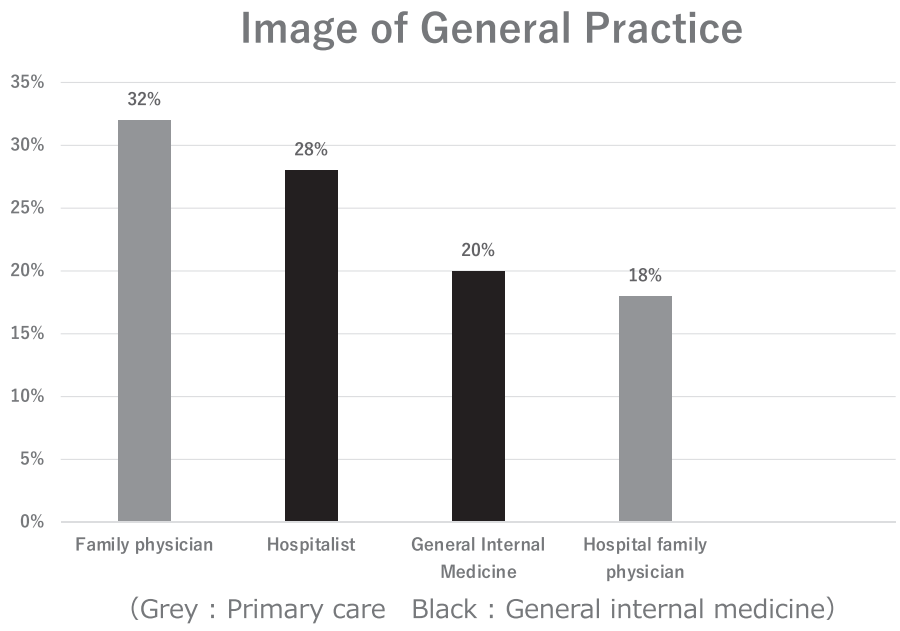

FIGURE 1 Image of general practice. Grey, Primary care; Black, General internal medicine.

TABLE 2 Response to the questionnaire.

	Response[a]	Overall (%)	General internal medicine	Hospitalist	Hospital family physician	Family physician	No answer
n		119	24	33	21	38	3
Important factors							
Job satisfaction	Strongly disagree	1 (0.8)	1 (4.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Disagree	3 (2.5)	0 (0.0)	0 (0.0)	1 (4.8)	2 (5.3)	0 (0.0)
	Uncertain	5 (4.2)	3 (12.5)	1 (3.0)	0 (0.0)	1 (2.6)	0 (0.0)
	Agree	69 (58.0)	12 (50.0)	19 (57.6)	17 (81.0)	18 (47.4)	3 (100.0)
	Strongly Agree	41 (34.5)	8 (33.3)	13 (39.4)	3 (14.3)	17 (44.7)	0 (0.0)
Practice	Strongly disagree	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.6)	0 (0.0)
	Disagree	3 (2.5)	1 (4.2)	0 (0.0)	0 (0.0)	2 (5.3)	0 (0.0)
	Uncertain	8 (6.7)	3 (12.5)	1 (3.0)	2 (9.5)	2 (5.3)	0 (0.0)
	Agree	56 (47.1)	11 (45.8)	17 (51.5)	13 (61.9)	13 (34.2)	2 (66.7)
	Strongly agree	51 (42.9)	9 (37.5)	15 (45.5)	6 (28.6)	20 (52.6)	1 (33.3)
Atmosphere of department	Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Disagree	1 (0.8)	1 (4.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Uncertain	4 (3.4)	2 (8.3)	2 (6.1)	0 (0.0)	0 (0.0)	0 (0.0)
	Agree	42 (35.3)	7 (29.2)	8 (24.2)	10 (47.6)	15 (39.5)	2 (66.7)
	Strongly agree	72 (60.5)	14 (58.3)	23 (69.7)	11 (52.4)	23 (60.5)	1 (33.3)
Professional status	Strongly disagree	16 (13.4)	1 (4.2)	6 (18.2)	3 (14.3)	6 (15.8)	0 (0.0)
	Disagree	33 (27.7)	4 (16.7)	11 (33.3)	5 (23.8)	12 (31.6)	1 (33.3)
	Uncertain	44 (37.0)	13 (54.2)	9 (27.3)	11 (52.4)	11 (28.9)	0 (0.0)
	Agree	14 (11.8)	2 (8.3)	4 (12.1)	1 (4.8)	5 (13.2)	2 (66.7)
	Strongly agree	12 (10.1)	4 (16.7)	3 (9.1)	1 (4.8)	4 (10.5)	0 (0.0)
Length of training	Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Disagree	2 (1.7)	0 (0.0)	1 (3.0)	0 (0.0)	1 (2.6)	0 (0.0)
	Uncertain	8 (6.7)	1 (4.2)	3 (9.1)	1 (4.8)	3 (7.9)	0 (0.0)
	Agree	58 (48.7)	11 (45.8)	15 (45.5)	10 (47.6)	19 (50.0)	3 (100.0)
	Strongly agree	51 (42.9)	12 (50.0)	14 (42.4)	10 (47.6)	15 (39.5)	0 (0.0)
Income potential	Strongly disagree	1 (0.8)	0 (0.0)	1 (3.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Disagree	10 (8.4)	2 (8.3)	3 (9.1)	1 (4.8)	4 (10.5)	0 (0.0)
	Uncertain	29 (24.4)	4 (16.7)	7 (21.2)	3 (14.3)	15 (39.5)	0 (0.0)
	Agree	53 (44.5)	10 (41.7)	17 (51.5)	14 (66.7)	10 (26.3)	2 (66.7)
	Strongly agree	26 (21.8)	8 (33.3)	5 (15.2)	3 (14.3)	9 (23.7)	1 (33.3)
Flexibility in location	Strongly disagree	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.6)	0 (0.0)
	Disagree	2 (1.7)	1 (4.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (33.3)
	Uncertain	14 (11.8)	2 (8.3)	7 (21.2)	1 (4.8)	4 (10.5)	0 (0.0)
	Agree	64 (53.8)	14 (58.3)	15 (45.5)	11 (52.4)	22 (57.9)	2 (66.7)
	Strongly agree	38 (31.9)	7 (29.2)	11 (33.3)	9 (42.9)	11 (28.9)	0 (0.0)
Reasonable working hours	Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Disagree	5 (4.2)	0 (0.0)	2 (6.1)	0 (0.0)	3 (7.9)	0 (0.0)
	Uncertain	15 (12.6)	1 (4.2)	6 (18.2)	2 (9.5)	5 (13.2)	1 (33.3)
	Agree	45 (37.8)	10 (41.7)	11 (33.3)	9 (42.9)	14 (36.8)	1 (33.3)
	Strongly agree	54 (45.4)	13 (54.2)	14 (42.4)	10 (47.6)	16 (42.1)	1 (33.3)
Close relationship with patients	Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Disagree	3 (2.5)	2 (8.3)	1 (3.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Uncertain	11 (9.2)	3 (12.5)	4 (12.1)	1 (4.8)	3 (7.9)	0 (0.0)
	Agree	51 (42.9)	9 (37.5)	11 (33.3)	12 (57.1)	17 (44.7)	2 (66.7)
	Strongly agree	54 (45.4)	10 (41.7)	17 (51.5)	8 (38.1)	18 (47.4)	1 (33.3)

TABLE 2 (Continued)

	Response[a]	Overall (%)	General internal medicine	Hospitalist	Hospital family physician	Family physician	No answer
Research opportunity	Strongly disagree	9 (7.6)	2 (8.3)	2 (6.1)	2 (9.5)	3 (7.9)	0 (0.0)
	Disagree	19 (16.0)	2 (8.3)	5 (15.2)	3 (14.3)	8 (21.1)	1 (3.3)
	Uncertain	38 (31.9)	6 (25.0)	15 (45.5)	6 (28.6)	10 (26.3)	1 (33.3)
	Agree	30 (25.2)	7 (29.2)	8 (24.2)	6 (28.6)	8 (21.1)	1 (33.3)
	Strongly agree	23 (19.3)	7 (29.2)	3 (9.1)	4 (19.0)	9 (23.7)	0 (0.0)
Influence factors							
Clinical clerkship of general practice	Strongly disagree	3 (2.5)	0 (0.0)	1 (3.0)	2 (9.5)	0 (0.0)	0 (0.0)
	Disagree	2 (1.7)	0 (0.0)	1 (3.0)	0 (0.0)	1 (2.6)	0 (0.0)
	Uncertain	4 (3.4)	2 (8.3)	1 (3.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Agree	28 (23.5)	7 (29.2)	7 (21.2)	3 (14.3)	11 (28.9)	0 (0.0)
	Strongly agree	37 (31.1)	9 (37.5)	6 (18.2)	10 (47.6)	12 (31.6)	0 (0.0)
	NA[b]	45 (37.8)	6 (25.0)	17 (51.5)	5 (23.8)	14 (36.8)	3 (100.0)
Relation with generalist	Strongly disagree	1 (0.8)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Disagree	1 (0.8)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Uncertain	10 (8.4)	3 (12.5)	1 (3.0)	3 (14.3)	3 (7.9)	0 (0.0)
	Agree	28 (23.5)	6 (25.0)	10 (30.3)	3 (14.3)	9 (23.7)	0 (0.0)
	Strongly agree	44 (37.0)	9 (37.5)	12 (36.4)	7 (33.3)	16 (42.1)	0 (0.0)
	NA	35 (29.4)	6 (25.0)	10 (30.3)	6 (28.6)	10 (26.3)	3 (100.0)
Atmosphere of generalist	Strongly disagree	1 (0.8)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Disagree	1 (0.8)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Uncertain	11 (9.2)	3 (12.5)	2 (6.1)	4 (19.0)	2 (5.3)	0 (0.0)
	Agree	27 (22.7)	7 (29.2)	9 (27.3)	3 (14.3)	8 (21.1)	0 (0.0)
	Strongly agree	39 (32.8)	6 (25.0)	13 (39.4)	6 (28.6)	14 (36.8)	0 (0.0)
	NA	40 (33.6)	8 (33.3)	9 (27.3)	6 (28.6)	14 (36.8)	3 (100.0)
Other medical students	Strongly disagree	2 (1.7)	0 (0.0)	0 (0.0)	1 (4.8)	1 (2.6)	0 (0.0)
	Disagree	4 (3.4)	2 (8.3)	0 (0.0)	0 (0.0)	2 (5.3)	0 (0.0)
	Uncertain	22 (18.5)	3 (12.5)	7 (21.2)	5 (23.8)	7 (18.4)	0 (0.0)
	Agree	40 (33.6)	8 (33.3)	12 (36.4)	3 (14.3)	17 (44.7)	0 (0.0)
	Strongly agree	27 (22.7)	8 (33.3)	7 (21.2)	8 (38.1)	3 (7.9)	1 (33.3)
	NA	24 (20.2)	3 (12.5)	7 (21.2)	4 (19.0)	8 (21.1)	2 (66.7)
Member of your family	Strongly disagree	3 (2.5)	0 (0.0)	1 (3.0)	1 (4.8)	1 (2.6)	0 (0.0)
	Disagree	3 (2.5)	0 (0.0)	0 (0.0)	1 (4.8)	1 (2.6)	1 (33.3)
	Uncertain	52 (43.7)	9 (37.5)	19 (57.6)	8 (38.1)	16 (42.1)	0 (0.0)
	Agree	17 (14.3)	7 (29.2)	3 (9.1)	1 (4.8)	6 (15.8)	0 (0.0)
	Strongly agree	10 (8.4)	3 (12.5)	0 (0.0)	4 (19.0)	3 (7.9)	0 (0.0)
	NA	34 (28.6)	5 (20.8)	10 (30.3)	6 (28.6)	11 (28.9)	2 (66.7)
University tutor	Strongly disagree	2 (1.7)	0 (0.0)	0 (0.0)	1 (4.8)	1 (2.6)	0 (0.0)
	Disagree	5 (4.2)	0 (0.0)	2 (6.1)	1 (4.8)	2 (5.3)	0 (0.0)
	Uncertain	26 (21.8)	6 (25.0)	9 (27.3)	3 (14.3)	8 (21.1)	0 (0.0)
	Agree	43 (36.1)	10 (41.7)	10 (30.3)	7 (33.3)	16 (42.1)	0 (0.0)
	Strongly agree	14 (11.8)	2 (8.3)	4 (12.1)	5 (23.8)	3 (7.9)	0 (0.0)
	NA	29 (24.4)	6 (25.0)	8 (24.2)	4 (19.0)	8 (21.1)	3 (100.0)

(Continues)

TABLE 2 (Continued)

	Response[a]	Overall (%)	General internal medicine	Hospitalist	Hospital family physician	Family physician	No answer
Hospital junior doctor	Strongly disagree	1 (0.8)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Disagree	3 (2.5)	1 (4.2)	1 (3.0)	0 (0.0)	1 (2.6)	0 (0.0)
	Uncertain	18 (15.1)	3 (12.5)	7 (21.2)	2 (9.5)	6 (15.8)	0 (0.0)
	Agree	39 (32.8)	8 (33.3)	11 (33.3)	7 (33.3)	13 (34.2)	0 (0.0)
	Strongly agree	22 (18.5)	5 (20.8)	4 (12.1)	6 (28.6)	7 (18.4)	0 (0.0)
	NA	36 (30.3)	7 (29.2)	10 (30.3)	5 (23.8)	11 (28.9)	3 (100.0)
Medical media	Strongly disagree	1 (0.8)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	0 (0.0)
	Disagree	4 (3.4)	0 (0.0)	2 (6.1)	1 (4.8)	1 (2.6)	0 (0.0)
	Uncertain	34 (28.6)	6 (25.0)	11 (33.3)	4 (19.0)	12 (31.6)	1 (33.3)
	Agree	37 (31.1)	10 (41.7)	9 (27.3)	4 (19.0)	14 (36.8)	0 (0.0)
	Strongly agree	14 (11.8)	3 (12.5)	3 (9.1)	5 (23.8)	3 (7.9)	0 (0.0)
	NA	29 (24.4)	5 (20.8)	8 (24.2)	6 (28.6)	8 (21.1)	2 (66.7)
Nonmedical media	Strongly disagree	3 (2.5)	1 (4.2)	0 (0.0)	1 (4.8)	1 (2.6)	0 (0.0)
	Disagree	3 (2.5)	0 (0.0)	1 (3.0)	0 (0.0)	2 (5.3)	0 (0.0)
	Uncertain	45 (37.8)	9 (37.5)	14 (42.4)	8 (38.1)	13 (34.2)	1 (33.3)
	Agree	32 (26.9)	8 (33.3)	9 (27.3)	5 (23.8)	10 (26.3)	0 (0.0)
	Strongly agree	7 (5.9)	1 (4.2)	1 (3.0)	2 (9.5)	3 (7.9)	0 (0.0)
	NA	29 (24.4)	5 (20.8)	8 (24.2)	5 (23.8)	9 (23.7)	2 (66.7)
Current medico-political climate	Strongly disagree	3 (2.5)	0 (0.0)	0 (0.0)	2 (9.5)	1 (2.6)	0 (0.0)
	Disagree	11 (9.2)	2 (8.3)	4 (12.1)	1 (4.8)	4 (10.5)	0 (0.0)
	Uncertain	31 (26.1)	9 (37.5)	10 (30.3)	3 (14.3)	8 (21.1)	1 (33.3)
	Agree	28 (23.5)	6 (25.0)	8 (24.2)	4 (19.0)	10 (26.3)	0 (0.0)
	Strongly agree	17 (14.3)	2 (8.3)	3 (9.1)	5 (23.8)	7 (18.4)	0 (0.0)
	NA	29 (24.4)	5 (20.8)	8 (24.2)	6 (28.6)	8 (21.1)	2 (66.7)
Culture of university	Strongly disagree	3 (2.5)	0 (0.0)	1 (3.0)	1 (4.8)	1 (2.6)	0 (0.0)
	Disagree	9 (7.6)	2 (8.3)	3 (9.1)	2 (9.5)	2 (5.3)	0 (0.0)
	Uncertain	27 (22.7)	3 (12.5)	7 (21.2)	7 (33.3)	9 (23.7)	1 (33.3)
	Agree	36 (30.3)	10 (41.7)	13 (39.4)	1 (4.8)	12 (31.6)	0 (0.0)
	Strongly agree	19 (16.0)	5 (20.8)	3 (9.1)	6 (28.6)	5 (13.2)	0 (0.0)
	NA	25 (21.0)	4 (16.7)	6 (18.2)	4 (19.0)	9 (23.7)	2 (66.7)
Your current or previous Generalist	Strongly disagree	2 (1.7)	0 (0.0)	0 (0.0)	2 (9.5)	0 (0.0)	0 (0.0)
	Disagree	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Uncertain	24 (20.2)	3 (12.5)	12 (36.4)	3 (14.3)	5 (13.2)	1 (33.3)
	Agree	36 (30.3)	8 (33.3)	10 (30.3)	6 (28.6)	12 (31.6)	0 (0.0)
	Strongly agree	28 (23.5)	7 (29.2)	5 (15.2)	5 (23.8)	11 (28.9)	0 (0.0)
	NA	29 (24.4)	6 (25.0)	6 (18.2)	5 (23.8)	10 (26.3)	2 (66.7)

[a]The survey responses were gathered on a five-point scale. In this analysis, responses were binary-transformed into two categories: those with an answer of "Strongly agree" or "Agree", and those with others.

[b]"NA" refers to things that participants have not experienced or do not know.

3 | RESULTS AND DISCUSSION

Of the 665 potential participants, 119 responded to the survey (response rate: 18%). The number of lower grade students who participated in the research was higher than that of higher grade students. Table 1 lists the relevant participant characteristics. Of these, 73% were interested in becoming a generalist in their careers. Medical students' impressions were as follows: family physicians (32%), hospitalists (28%), general internal medicine (20%), and hospital family physicians (18%). The results are shown in Figure 1 and Table 2. It means the impressions of generalists are varied, although they are almost evenly distributed. The participants

considered GIM more attractive than PC in terms of future career plans. Nine of the 10 students aspiring to work in GIM thought that the atmosphere of the department, job satisfaction, practice, length of training, close relationship with patients, flexibility in location, and reasonable working hours were important for career choice. In addition, almost all students aspiring for PC thought of the atmosphere of the department, practice, length of training, and close relationships with patients. The important factors with significant differences for medical students who were interested in GIM were reasonable working hours (Rate Ratio [RR] = 2.02, 95% Confidence Interval [CI], [1.24, 3.30]) and research opportunity (RR = 1.21, 95% CI [1.01, 1.44]). Recent research reported that generalists' international research output is increasing in Japan.[9] Income potential was less important for both GIM (RR = 0.83, 95%CI [0.70, 0.97]) and PC (RR = 0.73, 95%CI [0.57, 0.95]) groups. Regarding influence factors, clinical clerkship in general practice (RR = 1.72, 95% CI [1.02, 2.94]) and information from university tutors (RR = 1.60, 95% CI [1.01, 2.54]) were associated with PC choice. Regarding the participants who considered GM as generalists, there were no statistically significant factors in influence factors. This study had some limitations. First, the response rate was low. The low response rate can be attributed to factors such as the impact of the widespread COVID-19 pandemic, the inability to conduct face-to-face research requests, and the absence of incentives for responses. Second, this study was conducted targeting medical student organizations to gather responses from medical students nationwide, and a more socially aware group regarding the medical landscape was likely assembled. Therefore, it is presumed that there was a higher proportion of individuals interested in general practice compared to the general population of medical students. Considering this, it would be desirable for an additional study involving medical students from universities nationwide to be conducted. Furthermore, a significant number of medical students reported considering generalists as a career compared to the actual number of applicants for this specialty. This might be attributed to the study design, where respondents were allowed to select multiple specialties of interest. Additionally, the respondents may have provided answers that overlooked practical issues related to education and training in generalists as a result of a lack of proximity to career choices. Nevertheless, considering the ambiguous impressions of generalists, the results from a population with at least some interest may still carry meaningful implications. In this study, responses from senior students in the 5th and 6th years were limited, and the opinions of those more closely involved in career choices could not be adequately reflected. One possible reason is that the medical student group selected for the study primarily consisted of students in the 4th year and below, with fewer participants from the higher years approaching the national medical examination. On the other hand, previous studies[10] have reported that students often consider career choices based on their interest in clinical practices, and the abundance of lower year students may not significantly impact the results.

4 | CONCLUSION

Based on the results of the study, we assumed that the number of Japanese medical students who considered generalists to be PC and the number of those who considered generalists to be GIM were almost equal. A survey with larger and more representative participants is needed to investigate this hypothesis. To increase the number of medical students who consider and choose to become generalists, understanding their impressions of generalist practice and their needs regarding work settings in that role is crucial.

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CONFLICT OF INTEREST STATEMENT

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

DATA AVAILABILITY STATEMENT

The datasets are available from the corresponding author on reasonable request.

ETHICS STATEMENT

Ethics approval statement: The study protocol was performed following the Declaration of Helsinki, reviewed and approved by the Ethics Committee of Yokohama City University (approval number: 2022-03).

Patient consent statement: None.

Clinical trial registration: None.

SOCIETY MEMBERSHIP

The first and corresponding authors are members of the Japan Primary Care Association. The number of the membership is K3984.

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