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# BMJ Open

## Cross-sectional survey of education on LGBT content in medical schools in Japan

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3 1 **TITLE PAGE**

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7 3 **Cross-sectional survey of education on LGBT content in medical schools in Japan**

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54 25 **Word Count:** 3318 words

## 26 **Cross-sectional survey of education on LGBT content in medical schools in Japan**

### 27 **Abstract**

28 *Objectives:* We aimed to clarify current teaching on LGBT content in Japanese  
29 medical schools and compare it with data from the United States and Canada  
30 reported in 2011 and Australia and New Zealand reported in 2017.

31 *Design:* Cross-sectional study.

32 *Setting :* Eighty-two medical schools in Japan.

33 *Participants:* The Deans and/or relevant faculty members of the medical schools in  
34 Japan.

35 *Primary outcome measure :* Hours dedicated to teaching LGBT content in each medical  
36 school.

37 *Results:* In total, 60 schools (73.2%) returned a questionnaire. One was excluded  
38 because of missing values, leaving 59 responses (72.0%) for analysis. In total,  
39 LGBT content was included in preclinical training in 31 of 59 schools and in  
40 clinical training in eight of 53 schools. The median time dedicated to LGBT content  
41 was one hour (25th–75th percentile 0–2 hours) during preclinical training and zero  
42 hours during clinical training (25th–75th percentile 0–0 hour). Only 13 schools  
43 (22%) taught students to ask about same-sex relations when obtaining a sexual  
44 history. Biomedical topics were more likely to be taught than social topics. In total,  
45 45 of 57 schools (79%) evaluated their coverage of LGBT content as poor or very  
46 poor, and 23 schools (39%) had some students who had come out as LGBT.  
47 Schools with faculty members interested in education on LGBT content were more  
48 likely to cover it.

49 *Conclusion:* Education on LGBT content in Japanese medical schools is less  
50 established than in the US and Canada.

### 51 ***Strengths and limitations of this study***

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4 52   ▪ This is the first study to describe the quantity and quality of education on LGBT content  
5 53   through a survey of all medical schools in Japan and to compare them with US/Canada and  
6 54   Australia/New Zealand.  
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9 55   ▪ The questionnaire included items to investigate whether the presence of medical students/  
10 56   faculty who are coming out or faculty interested in LGBT education were associated with  
11 57   covering LGBT content.  
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14 59   ▪ Since the questionnaire was sent to the dean of the medical school, it is undeniable that it  
15 60   may not have been given to someone who has an overall understanding of LGBT  
16 61   education in medical schools.  
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20 62   **Keywords:** LGBT, medical education, undergraduate, Japan, international comparison  
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## 65 Introduction

66 Lesbian, gay, bisexual, transgender (LGBT) people are exposed to health inequalities. These  
67 health disparities are partly attributable to social discrimination. In Japan, 58% of LGBT people  
68 in have been bullied in school,<sup>1</sup> and 61.4% of transgender people have reported difficulties  
69 finding a job because of their gender identity.<sup>2</sup> As for health disparities, for example, gay and  
70 bisexual men have higher rate of attempted suicide than heterosexual men<sup>3</sup> and transgender  
71 people have high rates of suicidal ideation.<sup>4</sup> Lesbian and bisexual women have high rates of self-  
72 harm.<sup>5</sup>

73 Furthermore, In Japan, it has been reported that there are barriers for LGBT people to access  
74 medical care, and that they are sometimes treated inappropriately in medical settings. More than  
75 40% of transgender people reported that they had unpleasant experiences during medical visits or  
76 hesitated to seek medical care.<sup>6</sup> A survey of hospital nurse managers reported that more than  
77 30% of hospitals allowed visitation and end-of-life care only to relatives, and partners of the  
78 opposite sex, but not to partners of the same sex.<sup>7</sup>

79 To eliminate these health disparities, healthcare providers should be equipped with better  
80 knowledge, skills and attitudes. A systematic review reported that medical staff and students'  
81 knowledge and attitude towards LGBT patients was improved by education.<sup>8</sup> Education may  
82 therefore be an important tool in improving medical care for LGBT patients. However, as shown  
83 in this review, most of the reports on medical education about LGBT content are mainly from the  
84 U.S., with limited reports from Asia. Understanding the cultural background is important in  
85 developing medical education about LGBT content in East Asian countries, which have different  
86 cultural backgrounds from the West.

87 In Japan, it has been suggested that there are few people who come out, making LGBT people  
88 less visible. For example, in a survey of 16 countries conducted by Ipsos, 46% of respondents  
89 answered that they had an LGBT person close to them, compared with only 5% of respondents in  
90 Japan, the second lowest of the 16 countries.<sup>9</sup> Tamagawa also commented that “a number of  
91 Japanese GLBT scholars and activists attest that it is extremely difficult, if not impossible, to  
92 come out of the closet in Japanese society”(p488).<sup>10</sup> In Japan, where LGBT people are thus less  
93 visible, the revision of the model core curriculum for medical education for the 2016 academic  
94 year (2017) was the first version to include a learning goal about being able to “explain gender  
95 formation, sexual orientation, and ways of consideration for gender identification”(p43).<sup>11</sup>  
96 However, there are still no guidelines about what and how to teach LGBT-related content in  
97 medical education in Japan. Epidemiological studies are necessary to look at the current situation  
98 in detail and compare it with countries where education is already advanced. However, there is

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3 99 only one report in English describing the status of training on LGBT content in medical schools  
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5 100 in Japan.<sup>12</sup> It had a low response rate and did not ask for details about the content of the  
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7 101 education without direct comparison by survey data to other countries. Our study is the first  
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9 102 attempt of which we are aware to survey the quantity and quality of education on LGBT content  
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11 103 in Japanese medical schools and compare result with the data from other countries. We used a  
12  
13 104 questionnaire developed for a previous study in the US and Canada<sup>13</sup> and subsequently used in a  
14  
15 105 study in Australia and New Zealand<sup>14</sup> and compared results with data from those previous  
16  
17 106 studies.

## 107 **Methods**

### 108 **Participants and study setting**

109 Questionnaires were mailed to the 82 Deans of the medical schools in Japan between July 2018  
110 and January 2019. The aim and importance of our study were announced in the journal *Medical*  
111 *Education Japan* in April 2018.<sup>15</sup> We asked each Dean to complete the questionnaire, involving  
112 the director of education and/or relevant faculty members when necessary.  
113

### 114 **Questionnaire design**

115 The questionnaire consisted of 18 questions, including 13 drawn from Obedin-Maliver et al.<sup>13</sup>  
116 and translated into Japanese with permission from the author and American Medical Association  
117 through the Copyright Clearance Center (Copyright © 2011 American Medical Association. All  
118 rights reserved).

119 Five new questions were also included: 1) the type of school (public or private/others), 2)  
120 whether any medical students had come out as LGBT, 3) whether any faculty members had come  
121 out as LGBT, 4) whether any faculty members were interested in education on LGBT content  
122 and 5) who completed the questionnaire.

123 The primary outcome was hours dedicated to teaching LGBT content in each medical school.  
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### 125 **Data collection process**

126 Data were collected between July 2018 and January 2019. If there was no response by the due  
127 date, we mailed the questionnaire twice more and contacted the school by telephone.



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3 128 If schools did not wish to participate, we asked them to return the blank questionnaire. To  
4 129 confirm which universities had responded, the university name was included on the response  
5 130 envelope. The divisional clerk, who was not involved in the research, opened the envelopes and  
6 131 kept the answer sheets separately. The name of the university therefore could not be linked to the  
7 132 answers, and the completed questionnaires were treated as anonymous. The questionnaires  
8 133 included details of these processes. The questionnaire included information about the purpose of  
9 134 the study and how the answers would be used. Questionnaire completion was considered to show  
10 135 consent to participate in the study.  
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### 18 137 **Data analysis**

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20 138 Each question was analyzed excluding missing values. We compared the proportions of medical  
21 139 schools that taught each LGBT topic between Japan and the US and Canada using Fisher's test.  
22 140 This was also used to identify the statistical significance of the relationships between factors and  
23 141 teaching on LGBT content in Japan. Testing excluded any answers indicating "declined to  
24 142 answer". All statistical analyses used Stata ver16.0.  
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### 30 144 **Results**

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32 145 In total, 60 of the 82 schools (73.2%) responded, and 42 answered all questions. Four schools  
33 146 provided double answers to one question. We removed one respondent that did not answer 11 of  
34 147 18 questions, leaving responses from 59 schools (72.0% of Japanese medical schools) for  
35 148 analysis. The remaining respondents had no more than six missing answers and were included in  
36 149 the analysis (Figure 1). Two researchers checked the double answers and agreed how to combine  
37 150 them.  
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41 151 Only 15 of the 59 Deans completed the questionnaire themselves. In 36 schools, the  
42 152 respondents were the directors of education, 11 were completed by obstetrician-gynecologists,  
43 153 eight by psychiatrists, eight by urologists and 24 by others (for example, other specialties or  
44 154 office workers). Of the 59 schools, 28 were public, 27 were private or others and four schools did  
45 155 not answer this question.  
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## 156 **Education on LGBT content**

157 In total, 31 of the 59 schools (52.5% of respondents) included LGBT content in preclinical  
158 training, 18 (30.5%) did not and 10 (16.9%) did not know how many hours were spent. For the  
159 49 schools that provided this information for preclinical training, the median (25th–75th  
160 percentile) and mean ( $\pm$  standard deviation [SD]) hours were one hour (0–2 hours) and 1.6 ( $\pm$   
161 2.4) hours (Figure 2).

162 Only eight schools of 53 (15.1% of respondents) included LGBT content during clinical  
163 training, 25 schools (47.2%) did not cover it and 20 (37.7%) did not know. The median (25th–  
164 75th percentile) and mean ( $\pm$  SD) hours of the 33 schools were zero (0–0) hour and 0.3 ( $\pm$  0.6)  
165 hours (Figure 2).

166 In total, 33 schools (55.9% of respondents) provided information about hours spent on teaching  
167 LGBT content across the whole curriculum. The median (25th–75th percentile) and mean ( $\pm$  SD)  
168 were zero (0–2) hours and 1.4 ( $\pm$  2.4) hours. Six schools provided no information about clinical  
169 training time, resulting in fewer schools for analysis of total time. The median and mean total  
170 time were therefore shorter than the preclinical time. There was no statistically significant  
171 relationship between type of school (public or private/other) and teaching about LGBT content  
172 (Fisher's exact test, preclinical  $p = 0.38$ , clinical  $p = 0.65$ , total  $p = 0.24$ ).

173 In total, 51 schools provided information about whether their curricula covered 16 LGBT-  
174 related topics. Of these, 15 (29.4%) covered at least half the topics. For each topic, the number of  
175 schools that responded that it was taught in the required or elective curriculum and that it did not  
176 need to be taught are summarized in Table 1.

177 In total, 37 respondents of 57 (64.9%) did not evaluate students' knowledge about LGBT  
178 content. The most frequent form of evaluation was a written examination (16 of 57, 28.1%). No  
179 schools used faculty-observed patient interactions or evaluation by patients, and only one used  
180 peer-to-peer evaluations and evaluation by standardized patients. The free-text responses  
181 included answers such as reaction papers, reports, presentations and oral examinations.

182 The strategies that could be used to increase training on LGBT content are shown in Table 2.  
183 The most common was "Faculty willing and able to teach LGBT-related curricular content".

184 **Table 1. Proportion of schools teaching particular LGBT topics in the required or elective curriculum and answering ‘coverage**  
 185 **not needed’ about each topic**

	Available in required or elective curriculum (N = 51)	Coverage not needed (N = 53)
Disorders of Sex Development (DSD)/Intersex	23 (45%)	2 (4%)
HIV in LGBT people	20 (39%)	2 (4%)
Gender identity	19 (37%)	3 (6%)
Sexual orientation	17 (33%)	6 (11%)
Coming out	16 (31%)	6 (11%)
Transitioning	16 (31%)	3 (6%)
Sex reassignment surgery (SRS)	16 (31%)	2 (4%)
Sexually transmitted infections (not HIV) in LGBT people	15 (29%)	2 (4%)
Barriers to accessing medical care for LGBT people	14 (27%)	5 (9%)
Mental health in LGBT people	14 (27%)	5 (9%)
LGBT adolescent health	7 (14%)	5 (9%)
Body image in LGBT people	7 (14%)	6 (11%)
Alcohol, tobacco, or other drug use among LGBT people	5 (10%)	7 (13%)
Chronic disease risk for LGBT populations	5 (10%)	4 (8%)
Safer sex for LGBT people	4 (8%)	6 (11%)
Unhealthy relationships among LGBT people	0 (0%)	5 (9%)

186 These items were taken from questions 8 and 9 from the questionnaire by Obedin-Maliver et al.<sup>13</sup>

188 **Table 2. Possible strategies to increase LGBT-specific content\* (N = 50)**

	No. of respondents (%)
Faculty willing and able to teach LGBT-related curricular content	29 (58.0)
Curricular material coverage required by accreditation bodies	24 (48.0)
Questions based on LGBT health/health disparities on national examinations	20 (40.0)
More time in the curriculum to be able to teach LGBT-related content	20 (40.0)
Curricular material focusing on LGBT-related health/health disparities	16 (32.0)
Increased financial resources	10 (20.0)
More evidence-based research regarding LGBT health/health disparities	8 (16.0)
Logistical support for teaching LGBT-related curricular content	6 (12.0)
Methods to evaluate LGBT curricular content	6 (12.0)
Don't know	9 (18.0)
Other	3 (6.0)

189 \* To focus on what would help in future, we specifically asked about future strategies rather than current success strategies.

190 These items were taken from question 13 from the questionnaire by Obedin-Maliver et al.<sup>13</sup>

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5 192 **Original questions**

6 193 The results of our new questions are shown in Table 3. There were no relationships between  
7 194 whether any students or faculty members had come out and teaching about LGBT content  
8 195 (Fisher's exact test,  $p = 0.31$ ,  $p = 0.29$ ). The schools that clearly indicated that they had faculty  
9 196 members interested in education on LGBT content were more likely to cover it (Fisher's exact  
10 197 test,  $p < 0.01$ ).  
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198 **Table 3. Responses to our original question (N = 59)**

Were/are there	Yes	No	Don't know	Declined to answer
Any students who had come out as LGBT?	23 (39.0%)	10 (17.0%)	20 (33.9%)	6 (10.2%)
Any faculty members who had come out as LGBT?	7 (11.9%)	11 (18.6%)	37 (62.7%)	4 (6.8%)
Faculty members interested in education on LGBT content?	27 (45.8%)	1 (1.7%)	30 (50.9%)	1 (1.7%)

199

## 200 **Comparison between Japan, the US/Canada and Australia/New Zealand**

201 Only nine of 132 schools (6.8%) in the US and Canada did not include LGBT content in  
202 preclinical training. The proportion of schools not teaching it in Japan (18 of 59 schools, 30.5%)  
203 was therefore much higher (Fisher's exact test,  $p < 0.01$ ) (Figure 3). Even if all the schools that  
204 responded 'not known' had provided education on LGBT content during preclinical training in  
205 Japan, the proportion of schools not teaching about LGBT content would still be significantly  
206 higher in Japan than the US and Canada (Fisher's exact test,  $p < 0.01$ ). In the US and Canada, 44  
207 of 132 schools (33.3%) did not include LGBT content during clinical training, which was  
208 significantly less than in Japan (25 of 53 schools, 47.2%) (Fisher's exact test,  $p < 0.01$ ) (Figure  
209 3). There were also significant differences in both pre-clinical and clinical training when schools  
210 that answered "don't know" were excluded (Fisher's exact test,  $p < 0.01$ ).

211 In the US and Canada, the median time (25th–75th percentile) spent on LGBT content during  
212 preclinical and clinical training was 4 (2–6) and 2 (0–3) hours, longer than the 1 (0–2) and zero  
213 (0–0) hours in Japan.

214 We were unable to compare our data with Australia and New Zealand, because there was no  
215 information about how many schools there did not teach about LGBT content and the median  
216 hours were not shown.<sup>14</sup>

217 The detailed comparison between Japan, the US/Canada and Australia/New Zealand is shown  
218 in Table 4. There were too few data from Australia and New Zealand for detailed statistical  
219 comparisons.

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221 **Table 4. Comparison of education on LGBT content between Japan, the US and Canada, and Australia and New Zealand**

	Japan	U.S. and Canada	Australia and New Zealand
<b>No. of responders/total no. of schools (proportion)</b>	59/82 (72%)	132/176 (75%)	15/21 (71%)
<b>Methods of teaching LGBT content</b>	number (proportion)		
LGBT-specific content in the required preclinical curriculum <sup>†</sup>	interspersed	19 (32.8%)	88 (66.7%) *
	discrete modules	11 (19.0%)	32 (24.2%)
Lectures or small-group sessions in the required clinical curriculum <sup>‡</sup>	12 (20.3%)	79 (59.8%) *	2/1 <sup>  </sup> (13.3%/6.6%)
Clinical clerkship site that is specifically designed to facilitate LGBT patient care <sup>§</sup>	required clerkship	0 (0.0%)	7 <sup>¶¶</sup> (33.3%)
	elective clerkship	0 (0.0%)	12 (9.1%) **
Faculty development for teaching about LGBT health <sup>  </sup>	5 (8.5%)	27 (20.5%)	0 (0.0%)
<b>Coverage of LGBT content</b>	number (proportion)		
Asking about same-sex relations when obtaining sexual history <sup>¶¶</sup>	13 (22.0%)	128 (97.0%) *	12 (80.0%)
Teaching difference between behavior and identity <sup>††</sup>	17 (28.8%)	95 (72.0%) *	10 (66.7%)
At least half of 16 LGBT-related topics covered in elective or required curriculum <sup>‡‡</sup>	15 (29.4%)	99 (75.0%) *	-
Evaluation of coverage of LGBT content (very poor/poor) <sup>§§</sup>	45 (79.0%)	34 (25.8%) *	3 (20.0%)

222 \* P value < 0.01, \*\* P value < 0.05 for comparison of the proportions of schools that answered yes between Japan and U.S./Canada

223 Number answering “Do not know”/ missing value among Japanese responses: <sup>†</sup>3/1, <sup>‡</sup>11/0, <sup>§</sup>0/0, <sup>||</sup>4/0, <sup>¶¶</sup>17/0, <sup>††</sup>10/0, <sup>‡‡</sup>0/8, <sup>§§</sup>3/2

224 <sup>||</sup>Two schools had lectures and one had small-group sessions. Sanchez AA et al asked separately about lectures and small-group sessions. <sup>14</sup>

225 <sup>¶¶</sup>Two schools had clinical rotation site as a required clinical rotation, four as an elective and three as both. <sup>14</sup>

226 Items on methods of teaching LGBT content and coverage of LGBT content were cited from or corresponding to questions 2–5, and 6, 7, 8, and 10  
227 of the questionnaire by Obedin-Maliver et al.<sup>13</sup>



## 228 Discussion

229 This survey was the first attempt to compare education about LGBT content in medical schools  
230 in Japan with other countries. A much higher proportion of schools did not teach about LGBT  
231 content in Japan than in the US and Canada. The coverage of LGBT topics was also much lower  
232 in Japan than in the US/Canada and Australia/New Zealand. Faculty members interested in  
233 teaching LGBT content could be important in increasing its coverage in medical education.

234 In total, 31 of 59 schools said they taught about LGBT content. In contrast, a previous study by  
235 Yamazaki et al. reported that only 22 of 37 schools provided lectures or workshops on sexual  
236 and gender minorities in Japan.<sup>12</sup> This is because the methodology in selecting target schools was  
237 different from ours, which resulted in the longer lecture time (median 130 minutes) than ours.  
238 Both our study and that of Yamazaki et al. suggested that the time spent teaching about LGBT  
239 content is significantly lower in Japan than in the US and Canada. Our study also showed that a  
240 much higher proportion of schools in Japan do not include LGBT content during either  
241 preclinical or clinical training than in the US and Canada.<sup>13</sup> Nine years have passed since the  
242 survey in the US and Canada, but the curricula in Japan are still less established.

243 The quality of education on LGBT content was also lower in Japan than in the US/Canada and  
244 Australia/New Zealand. Some topics were not considered to be necessary by some Japanese  
245 respondents. Biomedical topics such as HIV and disorders of sex development were more likely  
246 to be taught than social topics such as unhealthy relationships, safer sex and substance abuse. We  
247 believe that the lack of educational guidelines on LGBT content means that there has been little  
248 discussion about what should be taught, resulting in lack of acknowledgement of the importance  
249 of social problems among LGBT people. In contrast, in the US, the guideline for medical  
250 education from the Association of American Medical Colleges summarized the health disparities  
251 of LGBT people, including social issues, and provided professional competency objectives to  
252 improve health care for LGBT people.<sup>16</sup>

253 Additional questions in our survey were designed to explore the factors that promote LGBT  
254 education. A study in the U.S. and Canada found that East Asian medical students were less  
255 likely to come out about their sexual identity than white students,<sup>17</sup> so we assumed that sexuality  
256 would also tend to be hidden in medical schools in Japan as well. We hypothesized that openly  
257 LGBT students or staff might stimulate interest. Of respondent schools, 39% had students who  
258 had come out as LGBT, which was more than we expected. However, we found no relationship  
259 between teaching time and whether there were LGBT staff or students who came out. It is

260 possible that staff or students coming out may be considered a single case, not a common issue,  
261 and therefore not result in changes in educational policy in the school.

262 The reasons why LGBT-related education in Japan is so much worse in both quantity and  
263 quality may be both socio-cultural and medical-educational. Socio-culturally, there are no anti-  
264 discrimination laws regarding sexual orientation or gender identity, and same-sex marriages have  
265 not been approved in Japan. Cultures and social systems that protect the rights of LGBT people  
266 may therefore be less mature in Japan. This could make it difficult for LGBT people to come out.  
267 In medical settings, 58% of LGBT people who accessed medical services for mental health  
268 issues did not disclose their sexual orientation or gender identity to staff.<sup>18</sup> It may therefore be  
269 hard for healthcare professionals to identify LGBT patients as such. Yamazaki et al reported that  
270 the most common reason for not teaching LGBT content in Japanese medical schools was  
271 unavailability of suitable instructors.<sup>12</sup> In our study, the most popular future strategy for  
272 increasing the time on LGBT content was “Faculty willing and able to teach LGBT-related  
273 curricular content”. We found that schools with faculty members interested in education on  
274 LGBT content were more likely to cover this topic. We therefore believe it is essential to provide  
275 more opportunities for faculty members to acquire the skills to teach about LGBT issues.

276 The inadequacy of medical education probably reflects the current state of medical practice in  
277 Japan. To reduce health disparities among LGBT people, it is necessary to examine whether  
278 LGBT people are being properly cared for in medical settings in countries where LGBT is  
279 invisible, such as Japan, as well as improving medical education.

## 280 **Limitations**

281 This study had some limitations. First, a high response rate was considered essential to enable  
282 comparisons with previous studies, so we actively followed up questionnaires, which increased  
283 the response rate from 47.6% after the first mail. However, the final response rate was just 73.2%  
284 (60 of 82 schools) which was lower than the 85.2% (150 of 176 schools) in the US and Canada.<sup>13</sup>  
285 The results should therefore be interpreted with caution.

286 Second, we calculated the proportion of schools for each question excluding missing values.  
287 The studies in the US and Canada<sup>13</sup> and in Australia and New Zealand<sup>14</sup> both used list-wise case  
288 deletion. Using this method, the proportion of schools including LGBT content in preclinical and  
289 clinical training decreased from 52.5% (31 of 59 schools) and 15.1% (eight of 53 schools) to  
290 35.7% (15 of 42 schools) and 11.9% (five of 42), an even bigger difference with the US and  
291 Canada. The median (25th–75th percentile) and mean ( $\pm$  SD) time were one (0–1.2) hour and 1.4

292 ( $\pm 2.5$ ) hours during preclinical training, and zero (0–0) hours and 0.25 ( $\pm 0.6$ ) hours during  
293 clinical training, which were very similar to our previous figures.

294 Third, there were some double answers for one question. This may be because the questionnaire  
295 had been given to individual departments rather than a key faculty member aware of the overall  
296 education curriculum. It is therefore not clear whether the responses accurately reflected the  
297 current situation. However, this confusion probably reflects a lack of coordinated training on  
298 LGBT content.

### 299 **Conclusions**

300 The median time given to LGBT content during preclinical training was one hour, and 30.5% of  
301 respondents did not include any time. During clinical training, the median time was zero hours,  
302 only 15.1% of respondents included dedicated time and 47.2% did not cover it at all. The  
303 coverage of LGBT topics in medical education was much lower in Japan than in the US/Canada  
304 and Australia/New Zealand. To promote education about LGBT content, it is necessary to train  
305 faculty members to be able to teach these topics.

### 306 **Acknowledgements**

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310 manuscript.

### 311 **Figure Legends**

312 Figure 1. The flowchart of respondent selection

313 Figure 2. Hours dedicated to teaching LGBT content in Japanese medical schools

314 Footnote: \*The numbers after the decimal point were rounded up.

315 Figure 3. Proportion of schools that did not teach about LGBT content at all

316

### 317 **Footnotes**

### 318 **Author Contributors**

319 EY designed the study, was primarily responsible for data collection, data analysis, interpretation  
320 and drafted the manuscript. MM designed the study, contributed to the interpretation of data, and  
321 reviewed the manuscript. FO interpreted the results and reviewed the manuscript. All co-authors  
322 reviewed and approved the article prior to submission.

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4 325 number: N/A).

6 326 **Disclaimer**

8 327 The sponsor of this study had no role in the study design; the study conduct including collection,  
9 328 analysis, or interpretation of the data; the manuscript preparation; or the decision to submit the  
10 329 manuscript for publication.

12 330 **Competing interests**

14 331 MM received lecture fees and lecture travel fees from the Centre for Family Medicine  
15 332 Development of the Japanese Health and Welfare Co-operative Federation. MM is an adviser of  
16 333 the Centre for Family Medicine Development practice-based research network, and a Program  
17 334 Director of the Jikei Clinical Research Program for Primary Care. MM's son-in-law works at  
18 335 IQVIA Services Japan K.K., which is a contract research organization and a contract sales  
19 336 organization. EY is a former trainee of the Jikei Clinical Research Program for Primary Care.

23 337 **Ethics approval**

24 338 **Patient consent for publication**

25 339 Not required.

27 340 **Ethics approval**

29 341 The study was approved by the ethics committee of the Jikei University School of Medicine for  
30 342 Biomedical Research (ref no. 30-042(9063)).

32 343 **Data sharing statement**

33 344 No additional data are available.

34 345

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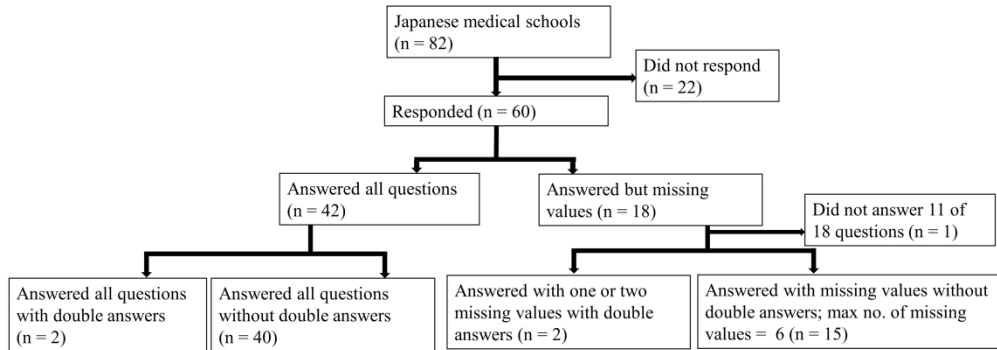


Figure 1. The flowchart of respondent selection

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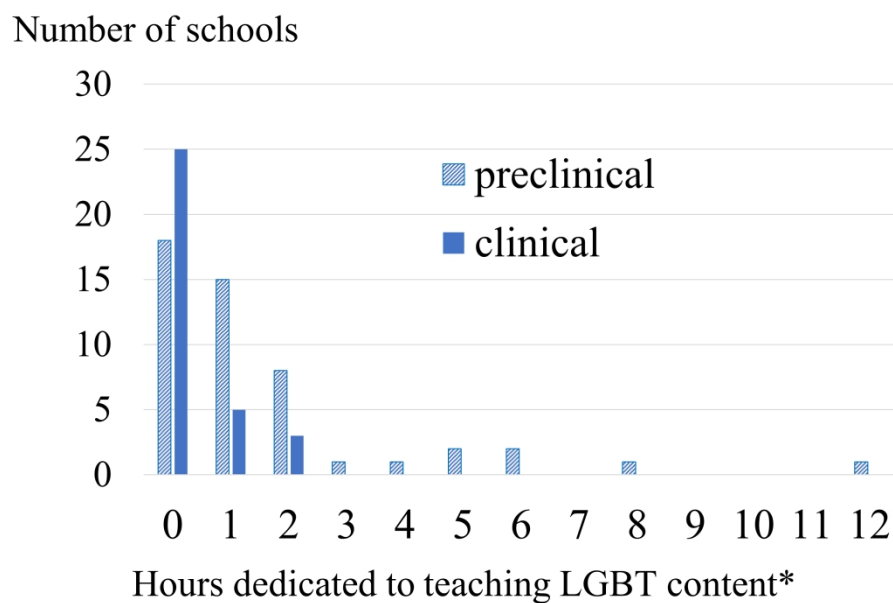


Figure 2. Hours dedicated to teaching LGBT content in Japanese medical schools



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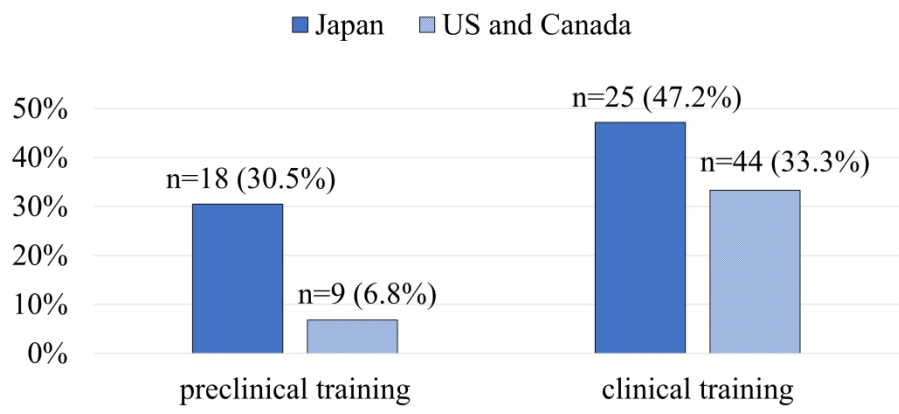


Figure 3. Proportion of schools that did not teach about LGBT content at all

STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

	Item No	Recommendation	Page No
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	4-5
Bias	9	Describe any efforts to address potential sources of bias	5-6
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	6
		(b) Describe any methods used to examine subgroups and interactions	6
		(c) Explain how missing data were addressed	6
		(d) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(e) Describe any sensitivity analyses	12
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	6
		(b) Give reasons for non-participation at each stage	6
		(c) Consider use of a flow diagram	6
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6
		(b) Indicate number of participants with missing data for each variable of interest	6-13
Outcome data	15*	Report numbers of outcome events or summary measures	6-13
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	6-7

		(b) Report category boundaries when continuous variables were categorized	N/A
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	10-11
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	14
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15-16
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14-16
Generalisability	21	Discuss the generalisability (external validity) of the study results	15
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	16

\*Give information separately for exposed and unexposed groups.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).

# BMJ Open

## Cross-sectional survey of education on LGBT content in medical schools in Japan

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<b>Primary Subject Heading</b>:	Medical education and training
Secondary Subject Heading:	Sexual health
Keywords:	MEDICAL EDUCATION & TRAINING, EPIDEMIOLOGY, SEXUAL MEDICINE

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12 5 **Authors**  
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54 25 **Word Count:** 4265 words  
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## 26 **Cross-sectional survey of education on LGBT content in medical schools in Japan**

### 27 **Abstract**

28 *Objectives:* We aimed to clarify current teaching on LGBT content in Japanese  
29 medical schools and compare it with data from the United States and Canada  
30 reported in 2011 and Australia and New Zealand reported in 2017.

31 *Design:* Cross-sectional study.

32 *Setting :* Eighty-two medical schools in Japan.

33 *Participants:* The Deans and/or relevant faculty members of the medical schools in  
34 Japan.

35 *Primary outcome measure :* Hours dedicated to teaching LGBT content in each medical  
36 school.

37 *Results:* In total, 60 schools (73.2%) returned a questionnaire. One was excluded  
38 because of missing values, leaving 59 responses (72.0%) for analysis. In total,  
39 LGBT content was included in preclinical training in 31 of 59 schools and in  
40 clinical training in eight of 53 schools. The proportion of schools that taught no  
41 LGBT content in Japan was significantly higher than that in the US and Canada,  
42 both in preclinical and clinical training ( $p < 0.01$ ). The median time dedicated to  
43 LGBT content was one hour (25th–75th percentile 0–2 hours) during preclinical  
44 training and zero hours during clinical training (25th–75th percentile 0–0 hour).  
45 Only 13 schools (22%) taught students to ask about same-sex relations when  
46 obtaining a sexual history. Biomedical topics were more likely to be taught than  
47 social topics. In total, 45 of 57 schools (79%) evaluated their coverage of LGBT  
48 content as poor or very poor, and 23 schools (39%) had some students who had  
49 come out as LGBT. Schools with faculty members interested in education on  
50 LGBT content were more likely to cover it.

51 *Conclusion:* Education on LGBT content in Japanese medical schools is less  
52 established than in the US and Canada.

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3 53 ***Strengths and limitations of this study***  
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- 6 54 ▪ This study used a questionnaire that included the same questions as previous studies to  
7 55 compare the quality and quantity of LGBT education in Japanese medical schools with that in  
8 56 the US/Canada and Australia/New Zealand.  
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10 57 ▪ In addition to the questions used in the surveys in the US/Canada and Australia/New Zealand,  
11 58 our questionnaire included items investigating whether the presence of medical  
12 59 students/faculty who had come out and the presence of faculty interested in LGBT education  
13 60 were associated with covering LGBT content.  
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15 61 ▪ Unlike a previous study in Japan, we distributed the questionnaire regarding LGBT content in  
16 62 education to all medical schools in the country.  
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18 63 ▪ This survey was conducted approximately 2 years after the Australia/New Zealand survey and  
19 64 approximately 9 years after the US/Canada survey; therefore, our study involved the limitation  
20 65 of not being able to make contemporaneous comparisons with these countries.  
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22 66 ▪ Because the questionnaire was sent to the Dean of the medical school, it may not have been  
23 67 given to a person with an overall understanding of LGBT education in medical schools.  
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28 68 **Keywords:** LGBT, medical education, undergraduate, Japan, international comparison  
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## 71 Introduction

72 Lesbian, gay, bisexual, transgender (LGBT) people are exposed to health inequities. These  
73 health disparities are partly attributable to social discrimination. In Japan, no nationwide survey  
74 of the size of the LGBT population has been undertaken by government. However, several  
75 surveys have been conducted at the municipal level. A survey conducted in Osaka City, the third  
76 largest city in Japan, revealed that 2.7% of respondents identified as LGBT. When individuals  
77 who identified as asexual were included, the figure was 3.3%.<sup>1</sup> Social discrimination and health  
78 disparities against LGBT people have also been reported in Japan. 58% of LGBT people in have  
79 been bullied in school,<sup>2</sup> and 61.4% of transgender people have reported difficulties finding a job  
80 because of their gender identity.<sup>3</sup> As for health disparities, for example, gay and bisexual men  
81 have higher rate of attempted suicide than heterosexual men<sup>4</sup> and transgender people have high  
82 rates of suicidal ideation.<sup>5</sup> Lesbian and bisexual women have high rates of self-harm.<sup>6</sup>

83 Furthermore, in Japan, it has been reported that there are barriers for LGBT people to access  
84 medical care, and that they are sometimes treated inappropriately in medical settings. More than  
85 40% of transgender people reported that they had unpleasant experiences during medical visits or  
86 hesitated to seek medical care.<sup>7</sup> A survey of hospital nurse managers reported that more than  
87 30% of hospitals allowed visitation and end-of-life care only to relatives, and partners of the  
88 opposite sex, but not to partners of the same sex.<sup>8</sup>

89 To eliminate these health disparities, healthcare providers should be equipped with better  
90 knowledge, skills and attitudes. A systematic review reported that medical staff and students'  
91 knowledge and attitude towards LGBT patients was improved by education.<sup>9</sup> Education may  
92 therefore be an important tool in improving medical care for LGBT patients. However, as shown  
93 in this review, most of the reports on medical education about LGBT content are mainly from the  
94 U.S., with limited reports from Asia. Understanding the cultural background is important in  
95 developing medical education about LGBT content in East Asian countries, which have different  
96 cultural backgrounds from the West.

97 In Japan, it has been suggested that there are few people who come out, making LGBT people  
98 less visible. For example, in a survey of 16 countries conducted by Ipsos, 46% of respondents  
99 answered that they had an LGBT person close to them, compared with only 5% of respondents in  
100 Japan, the second lowest of the 16 countries.<sup>10</sup> Tamagawa also commented that “a number of  
101 Japanese GLBT scholars and activists attest that it is extremely difficult, if not impossible, to  
102 come out of the closet in Japanese society”(p488).<sup>11</sup> In Japan, where LGBT people are thus less  
103 visible, the revision of the model core curriculum for medical education for the 2016 academic  
104 year (2017) was the first version to include a learning goal about being able to “explain gender

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3 105 formation, sexual orientation, and ways of consideration for gender identification”(p43).<sup>12</sup>  
4 106 However, there are still no guidelines about what and how to teach LGBT-related content in  
5 107 medical education in Japan. Epidemiological studies are necessary to look at the current situation  
6 108 in detail and compare it with countries where education is already advanced. However, there is  
7 109 only one report in English describing the status of training on LGBT content in medical schools  
8 110 in Japan.<sup>13</sup> It had a low response rate and did not ask for details about the content of the  
9 111 education without direct comparison by survey data to other countries. Our study is the first  
10 112 attempt of which we are aware to survey the quantity and quality of education on LGBT content  
11 113 in Japanese medical schools and compare result with the data from other countries. We used a  
12 114 questionnaire developed for a previous study in the US and Canada<sup>14</sup> and subsequently used in a  
13 115 study in Australia and New Zealand<sup>15</sup> and compared results with data from those previous  
14 116 studies.

## 117 **Methods**

### 118 **Participants and study setting**

119 Questionnaires were mailed to the 82 Deans of the medical schools in Japan between July 2018  
120 and January 2019. The aim and importance of our study were announced in the journal *Medical*  
121 *Education Japan* in April 2018.<sup>16</sup> We asked each Dean to complete the questionnaire, involving  
122 the director of education and/or relevant faculty members when necessary.  
123

### 124 **Questionnaire design**

125 The questionnaire consisted of 18 questions, including 13 drawn from Obedin-Maliver et al.<sup>14</sup>  
126 and translated into Japanese with permission from the author and American Medical Association  
127 through the Copyright Clearance Center (Copyright © 2011 American Medical Association. All  
128 rights reserved).

129 Five new questions were also included: 1) the type of school (public or private/others), 2)  
130 whether any medical students had come out as LGBT, 3) whether any faculty members had come  
131 out as LGBT, 4) whether any faculty members were interested in education on LGBT content  
132 and 5) who completed the questionnaire.

133 The primary outcome was hours dedicated to teaching LGBT content in each medical school.  
134 The secondary outcomes were: teaching methods, the extent to which LGBT health areas are

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3 135 taught, the evaluation methods of LGBT-related learning, and strategies to increase time devoted  
4 136 to education of LGBT content..  
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9 138 **Data collection process**

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11 139 Data were collected between July 2018 and January 2019. If there was no response by the due  
12 140 date, we mailed the questionnaire twice more and contacted the school by telephone.

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14 141 If schools did not wish to participate, we asked them to return the blank questionnaire. To  
15 142 confirm which universities had responded, the university name was included on the response  
16 143 envelope. The divisional clerk, who was not involved in the research, opened the envelopes and  
17 144 kept the answer sheets separately. The name of the university therefore could not be linked to the  
18 145 answers, and the completed questionnaires were treated as anonymous. The questionnaires  
19 146 included details of these processes. The questionnaire included information about the purpose of  
20 147 the study and how the answers would be used. Questionnaire completion was considered to show  
21 148 consent to participate in the study.  
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29 150 **Data analysis**

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31 151 Each question was analyzed excluding missing values. We compared the proportions of medical  
32 152 schools that taught each LGBT topic between Japan and the US and Canada<sup>14</sup> using Fisher's test.  
33 153 This was also used to identify the statistical significance of the relationships between factors and  
34 154 teaching on LGBT content in Japan. Wilcoxon's rank sum test was used to test the significance  
35 155 of difference in hours spent teaching LGBT content between public and private/other schools.  
36 156 Testing excluded any answers indicating "declined to answer". All statistical analyses used Stata  
37 157 ver16.0.  
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45 159 **Patient and public involvement**

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47 160 No patients involved.  
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50 161 **Results**

51 162 In total, 60 of the 82 schools (73.2%) responded, and 42 answered all questions. Four schools  
52 163 provided double answers to one question. We removed one respondent that did not answer 11 of  
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3 164 18 questions, leaving responses from 59 schools (72.0% of Japanese medical schools) for  
4 165 analysis. The remaining respondents had no more than six missing answers and were included in  
5 166 the analysis (Figure 1). Two researchers checked the double answers and agreed how to combine  
6 167 them.

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8 168 Only 15 of the 59 Deans completed the questionnaire themselves. In 36 schools, the  
9 169 respondents were the directors of education, 11 were completed by obstetrician-gynecologists,  
10 170 eight by psychiatrists, eight by urologists and 24 by others (for example, other specialties or  
11 171 office workers). Of the 59 schools, 28 were public, 27 were private or others and four schools did  
12 172 not answer this question.

### 13 173 **Education on LGBT content**

14 174 In total, 31 of the 59 schools (52.5% of respondents) included LGBT content in preclinical  
15 175 training, 18 (30.5%) did not and 10 (16.9%) did not know how many hours were spent. For the  
16 176 49 schools that provided this information for preclinical training, the median (25th–75th  
17 177 percentile) and mean ( $\pm$  standard deviation [SD]) hours were one hour (0–2 hours) and 1.6 ( $\pm$   
18 178 2.4) hours (Figure 2).

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21 179 Only eight schools of 53 (15.1% of respondents) included LGBT content during clinical  
22 180 training, 25 schools (47.2%) did not cover it and 20 (37.7%) did not know. The median (25th–  
23 181 75th percentile) and mean ( $\pm$  SD) hours of the 33 schools were zero (0–0) hour and 0.3 ( $\pm$  0.6)  
24 182 hours (Figure 2).

25 183 In total, 33 schools (55.9% of respondents) provided information about hours spent on teaching  
26 184 LGBT content across the whole curriculum. The median (25th–75th percentile) and mean ( $\pm$  SD)  
27 185 were zero (0–2) hours and 1.4 ( $\pm$  2.4) hours. Six schools provided no information about clinical  
28 186 training time, resulting in fewer schools for analysis of total time. The median and mean total  
29 187 time were therefore shorter than the preclinical time.

30 188 There was no statistically significant relationship between type of school (public or  
31 189 private/other) and teaching about LGBT content (Fisher's exact test, preclinical  $p = 0.38$ , clinical  
32 190  $p = 0.65$ , total  $p = 0.24$ ). The time spent in preclinical and clinical training was also not  
33 191 significantly different between public and private/other schools (Wilcoxon's rank-sum test,  
34 192  $p=0.19$ ,  $p=0.76$ ).

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37 193 In total, 51 schools provided information about whether their curricula covered 16 LGBT-related  
38 194 topics. Of these, 15 (29.4%) covered at least half the topics. For each topic, the number of

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3 195 schools that responded that it was taught in the required or elective curriculum and that it did not  
4 196 need to be taught are summarized in Table 1.

6 197 In total, 37 respondents of 57 (64.9%) did not evaluate students' knowledge about LGBT  
7 198 content. The most frequent form of evaluation was a written examination (16 of 57, 28.1%). No  
8 199 schools used faculty-observed patient interactions or evaluation by patients, and only one used  
9 200 peer-to-peer evaluations and evaluation by standardized patients. The free-text responses  
10 201 included answers such as reaction papers, reports, presentations and oral examinations.

12 202 The strategies that could be used to increase training on LGBT content are shown in Table 2.  
13 203 The most common was "Faculty willing and able to teach LGBT-related curricular content".  
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204 **Table 1. Proportion of schools teaching particular LGBT topics in the required or elective curriculum and answering ‘coverage**  
 205 **not needed’ about each topic**

	Available in required or elective curriculum (N = 51)	Coverage not needed (N = 53)
Disorders of Sex Development (DSD)/Intersex	23 (45%)	2 (4%)
HIV in LGBT people	20 (39%)	2 (4%)
Gender identity	19 (37%)	3 (6%)
Sexual orientation	17 (33%)	6 (11%)
Coming out	16 (31%)	6 (11%)
Transitioning	16 (31%)	3 (6%)
Sex reassignment surgery (SRS)	16 (31%)	2 (4%)
Sexually transmitted infections (not HIV) in LGBT people	15 (29%)	2 (4%)
Barriers to accessing medical care for LGBT people	14 (27%)	5 (9%)
Mental health in LGBT people	14 (27%)	5 (9%)
LGBT adolescent health	7 (14%)	5 (9%)
Body image in LGBT people	7 (14%)	6 (11%)
Alcohol, tobacco, or other drug use among LGBT people	5 (10%)	7 (13%)
Chronic disease risk for LGBT populations	5 (10%)	4 (8%)
Safer sex for LGBT people	4 (8%)	6 (11%)
Unhealthy relationships among LGBT people	0 (0%)	5 (9%)

206 These items were taken from questions 8 and 9 from the questionnaire by Obedin-Maliver et al.<sup>14</sup>

208 **Table 2. Possible strategies to increase LGBT-specific content\* (N = 50)**

	No. of respondents (%)
Faculty willing and able to teach LGBT-related curricular content	29 (58.0)
Curricular material coverage required by accreditation bodies	24 (48.0)
Questions based on LGBT health/health disparities on national examinations	20 (40.0)
More time in the curriculum to be able to teach LGBT-related content	20 (40.0)
Curricular material focusing on LGBT-related health/health disparities	16 (32.0)
Increased financial resources	10 (20.0)
More evidence-based research regarding LGBT health/health disparities	8 (16.0)
Logistical support for teaching LGBT-related curricular content	6 (12.0)
Methods to evaluate LGBT curricular content	6 (12.0)
Don't know	9 (18.0)
Other	3 (6.0)

209 \* To focus on what would help in future, we specifically asked about future strategies rather than current success strategies.

210 These items were taken from question 13 from the questionnaire by Obedin-Maliver et al.<sup>14</sup>

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5 212 **Original questions**

6 213 The results of our new questions are shown in Table 3. There were no relationships between  
7 214 whether any students or faculty members had come out and teaching about LGBT content  
8 215 (Fisher's exact test,  $p = 0.31$ ,  $p = 0.29$ ). The schools that clearly indicated that they had faculty  
9 216 members interested in education on LGBT content were more likely to cover it (Fisher's exact  
10 217 test,  $p < 0.01$ ).  
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218 **Table 3. Responses to our original question (N = 59)**

Were/are there	Yes	No	Don't know	Declined to answer
Any students who had come out as LGBT?	23 (39.0%)	10 (17.0%)	20 (33.9%)	6 (10.2%)
Any faculty members who had come out as LGBT?	7 (11.9%)	11 (18.6%)	37 (62.7%)	4 (6.8%)
Faculty members interested in education on LGBT content?	27 (45.8%)	1 (1.7%)	30 (50.9%)	1 (1.7%)

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## 220 **Comparison between Japan, the US/Canada and Australia/New Zealand**

221 Only nine of 132 schools (6.8%) in the US and Canada did not include LGBT content in  
222 preclinical training.<sup>14</sup> The proportion of schools not teaching it in Japan (18 of 59 schools,  
223 30.5%) was therefore much higher (Fisher's exact test,  $p < 0.01$ ) (Figure 3). Even if all the  
224 schools that responded 'not known' had provided education on LGBT content during preclinical  
225 training in Japan, the proportion of schools not teaching about LGBT content would still be  
226 significantly higher in Japan than the US and Canada (Fisher's exact test,  $p < 0.01$ ). In the US  
227 and Canada, 44 of 132 schools (33.3%) did not include LGBT content during clinical training,<sup>14</sup>  
228 which was significantly less than in Japan (25 of 53 schools, 47.2%) (Fisher's exact test,  $p <$   
229  $0.01$ ) (Figure 3). There were also significant differences in both pre-clinical and clinical training  
230 when schools that answered "don't know" were excluded (Fisher's exact test,  $p < 0.01$ ). We were  
231 unable to statistically compare our data with Australia and New Zealand, because there was no  
232 information about how many schools there did not teach about LGBT content.<sup>15</sup>

233 In the US and Canada, the median time (25th–75th percentile) spent on LGBT content during  
234 preclinical and clinical training was 4 (2–6) and 2 (0–3) hours,<sup>14</sup> longer than the 1 (0–2) and zero  
235 (0–0) hours in Japan. The study in Australia and New Zealand did not provide the median hours.  
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237 The detailed comparison between Japan, the US/Canada<sup>14</sup> and Australia/New Zealand<sup>15</sup> is shown  
238 in Table 4. There were too few data from Australia and New Zealand for detailed statistical  
239 comparisons.

240 **Table 4. Comparison of education on LGBT content between Japan, the US and Canada, and Australia and New Zealand**

	Japan	U.S. and Canada <sup>14</sup>	Australia and New Zealand <sup>15</sup>
<b>No. of responders/total no. of schools (proportion)</b>	59/82 (72%)	132/176 (75%)	15/21 (71%)
<b>Methods of teaching LGBT content</b>	number (proportion)		
LGBT-specific content in the required preclinical curriculum <sup>†</sup>	interspersed	19 (32.8%)	88 (66.7%) *
	discrete modules	11 (19.0%)	32 (24.2%)
Lectures or small-group sessions in the required clinical curriculum <sup>‡</sup>	12 (20.3%)	79 (59.8%) *	2/1 <sup>¶</sup> (13.3%/6.6%)
Clinical clerkship site that is specifically designed to facilitate LGBT patient care <sup>§</sup>	required clerkship	0 (0.0%)	7 <sup>¶¶</sup> (33.3%)
	elective clerkship	0 (0.0%)	12 (9.1%) **
Faculty development for teaching about LGBT health <sup>  </sup>	5 (8.5%)	27 (20.5%)	0 (0.0%)
<b>Coverage of LGBT content</b>	number (proportion)		
Asking about same-sex relations when obtaining sexual history <sup>¶¶</sup>	13 (22.0%)	128 (97.0%) *	12 (80.0%)
Teaching difference between behavior and identity <sup>††</sup>	17 (28.8%)	95 (72.0%) *	10 (66.7%)
At least half of 16 LGBT-related topics covered in elective or required curriculum <sup>‡‡</sup>	15 (29.4%)	99 (75.0%) *	-
Evaluation of coverage of LGBT content (very poor/poor) <sup>§§</sup>	45 (79.0%)	34 (25.8%) *	3 (20.0%)

241 \* P value < 0.01, \*\* P value < 0.05 for comparison of the proportions of schools that answered yes between Japan and U.S./Canada

242 Number answering "Do not know"/ missing value among Japanese responses: <sup>†</sup>3/1, <sup>‡</sup>11/0, <sup>§</sup>0/0, <sup>||</sup>4/0, <sup>¶</sup>17/0, <sup>††</sup>10/0, <sup>‡‡</sup>0/8, <sup>§§</sup>3/2

243 <sup>¶¶</sup>Two schools had lectures and one had small-group sessions. Sanchez AA et al asked separately about lectures and small-group sessions. <sup>15</sup>

244 <sup>¶¶¶</sup>Two schools had clinical rotation site as a required clinical rotation, four as an elective and three as both. <sup>15</sup>

245 Items on methods of teaching LGBT content and coverage of LGBT content were cited from or corresponding to questions 2–5, and 6, 7, 8, and 10  
246 of the questionnaire by Obedin-Maliver et al.<sup>14</sup>

## 247 **Discussion**

248 This survey was the first attempt to compare education about LGBT content in medical schools  
249 in Japan with other countries. A much higher proportion of schools did not teach about LGBT  
250 content in Japan than in the US and Canada. The coverage of LGBT topics was also much lower  
251 in Japan than in the US/Canada and Australia/New Zealand. Faculty members interested in  
252 teaching LGBT content could be important in increasing its coverage in medical education.

253 In total, 31 of 59 schools said they taught about LGBT content. In contrast, a previous study by  
254 Yamazaki et al. reported that only 22 of 37 schools provided lectures or workshops on sexual  
255 and gender minorities in Japan.<sup>13</sup> This is because the methodology in selecting target schools was  
256 different from ours, which resulted in the longer lecture time (median 130 minutes) than ours. In  
257 Yamazaki et al.'s study, one faculty member was first selected from each of 80 medical schools  
258 based on a list of a medical education organization. Next, double postcards were sent to each of  
259 the 80 selected faculty members asking them to refer a key person who could provide accurate  
260 information about lectures on sexual and gender minorities (SGM) in their medical schools.  
261 Among 47 schools for which postcards were returned, 43 were considered eligible for the survey.  
262 Finally, the second questionnaire about lectures on SGM were sent, and 37 schools responded.  
263 Thus, the final response rate was 46.3% (37/80).<sup>13</sup> Accordingly, the current study has the  
264 strength of having a better response rate than that of Yamazaki et al. Both our study and that of  
265 Yamazaki et al.<sup>13</sup> suggested that the time spent teaching about LGBT content is significantly  
266 lower in Japan than in the US and Canada. Our study also showed that a much higher proportion  
267 of schools in Japan do not include LGBT content during either preclinical or clinical training  
268 than in the US and Canada.<sup>14</sup> Nine years have passed since the survey in the US and Canada,<sup>14</sup>  
269 but the curricula in Japan are still less established.

270 The quality of education on LGBT content was also lower in Japan than in the US/Canada and  
271 Australia/New Zealand. Some topics were not considered to be necessary by some Japanese  
272 respondents. Biomedical topics such as HIV and disorders of sex development (DSDs) were  
273 more likely to be taught than social topics such as unhealthy relationships, safer sex and  
274 substance abuse. Although teaching about DSDs is important, it is not a substitute for teaching  
275 LGBT content. The term LGBTI is sometimes used to include intersex in LGBT in Japan,<sup>17</sup>  
276 whereas DSDs refer to a wide range of congenital conditions, not sexual orientation or gender  
277 identity. We believe that the lack of educational guidelines on LGBT content means that there  
278 has been little discussion about what should be taught, resulting in lack of acknowledgement of  
279 the importance of social problems among LGBT people. In contrast, in the US, the guideline for

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3 280 medical education from the Association of American Medical Colleges (AAMC) summarized  
4 281 the health disparities of individuals who are LGBT, gender nonconforming, or born with DSD,  
5 282 including social issues, and provided professional competency objectives to improve health care  
6 283 for those people.<sup>18</sup>

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8 284 Additional questions in our survey were designed to explore the factors that promote LGBT  
9 285 education. A study in the U.S. and Canada found that East Asian medical students were less  
10 286 likely to come out about their sexual identity than white students,<sup>19</sup> so we assumed that sexuality  
11 287 would also tend to be hidden in medical schools in Japan as well. We hypothesized that openly  
12 288 LGBT students or staff might stimulate interest. Of respondent schools, 39% had students who  
13 289 had come out as LGBT, which was more than we expected. However, we found no relationship  
14 290 between teaching time and whether there were LGBT staff or students who came out. It is  
15 291 possible that staff or students coming out may be considered a single case, not a common issue,  
16 292 and therefore not result in changes in educational policy in the school.

17 293 The reasons why LGBT-related education in Japan is so much worse in both quantity and  
18 294 quality may be both socio-cultural and medical-educational. Socio-culturally, there are no anti-  
19 295 discrimination laws regarding sexual orientation or gender identity, and same-sex marriages have  
20 296 not been approved in Japan. Cultures and social systems that protect the rights of LGBT people  
21 297 may therefore be less mature in Japan. This could make it difficult for LGBT people to come out.  
22 298 In medical settings, 58% of LGBT people who accessed medical services for mental health  
23 299 issues did not disclose their sexual orientation or gender identity to staff.<sup>20</sup> It may therefore be  
24 300 hard for healthcare professionals to identify LGBT patients as such. However, the movement for  
25 301 the rights of LGBT people in Japan is slowly making progress. For example, there is a growing  
26 302 movement at the local government level to issue certificates for same-sex partnerships. Medical  
27 303 institutions are also beginning to provide support for LGBT people. For example, Juntendo  
28 304 University Hospital in Tokyo established a working group in 2021 to consider and respond to  
29 305 patients, families and staff regarding sexual orientation and gender identity, and has started  
30 306 activities such as providing learning opportunities for medical staff and a sexual orientation and  
31 307 gender identity consultation service.<sup>21</sup>

32 308 From a medical education perspective, Yamazaki et al reported that the most common reason  
33 309 for not teaching LGBT content in Japanese medical schools was unavailability of suitable  
34 310 instructors.<sup>13</sup> In our study, the most popular future strategy for increasing the time on LGBT  
35 311 content was “Faculty willing and able to teach LGBT-related curricular content”. We found that  
36 312 schools with faculty members interested in education on LGBT content were more likely to  
37 313 cover this topic. We therefore believe it is essential to provide more opportunities for faculty  
38 314 members to acquire the skills to teach about LGBT issues. Yamazaki et al. recommended the

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3 315 following six steps to promote medical education on SGM: engaging appropriate stakeholders,  
4 316 developing a textbook or educational guide for SGM education, and developing a diverse  
5 317 curriculum team for each medical school, as well as conducting faculty development, curriculum  
6 318 development, and curriculum evaluation.<sup>13</sup> We believe that all of these steps are necessary in  
7 319 Japan. Our study highlighted the importance of the third step “diverse curriculum team for each  
8 320 medical school” and the fourth step “conducting faculty development”. In Japan, although  
9 321 workshops have been held to devise and implement education about LGBT content in medical  
10 322 education courses, such meetings are not conducted on a continuous basis. Accessible online  
11 323 courses could potentially provide valuable opportunities for more educators in Japan to learn  
12 324 about teaching LGBT content, such as those offered by Stanford Medicine.<sup>22</sup> The current results  
13 325 also revealed that one school in Japan had made outstanding progress, spending 12 hours on  
14 326 LGBT education. It would be useful to share information about how this school started and  
15 327 evolved their teaching, so that schools who are not currently teaching LGBT content at all can  
16 328 start teaching it. There is also an urgent need in Japan to develop guidelines for medical  
17 329 education on LGBT content. In addition to education provided by each medical school, internet  
18 330 resources such as AAMC material can be used to provide opportunities for all medical students  
19 331 in Japan to learn LGBT content.<sup>23</sup>

20 332 To the best of our knowledge, no previous survey has examined the current status of post-  
21 333 graduate education for physicians on LGBT issues in Japan. Although a small number of lectures  
22 334 and workshops have recently been held in the level of academic society,<sup>24,25</sup> the opportunities for  
23 335 physicians to learn about LGBT content after graduation are still limited. Therefore, it is  
24 336 important to provide opportunities for education on LGBT content in undergraduate education.

25 337 The inadequacy of medical education probably reflects the current state of medical practice in  
26 338 Japan. To reduce health disparities among LGBT people, it is necessary to examine whether  
27 339 LGBT people are being properly cared for in medical settings in countries where LGBT is  
28 340 invisible, such as Japan, as well as improving medical education.

### 341 **Limitations**

342 This study had some limitations. First, a high response rate was considered essential to enable  
343 comparisons with previous studies, so we actively followed up questionnaires, which increased  
344 the response rate from 47.6% after the first mail. However, the final response rate was just 73.2%  
345 (60 of 82 schools) which was lower than the 85.2% (150 of 176 schools) in the US and Canada.<sup>14</sup>  
346 The results should therefore be interpreted with caution.

347 Second, we calculated the proportion of schools for each question excluding missing values.  
348 The studies in the US and Canada<sup>14</sup> and in Australia and New Zealand<sup>15</sup> both used list-wise case  
349 deletion. Using this method, the proportion of schools including LGBT content in preclinical and  
350 clinical training decreased from 52.5% (31 of 59 schools) and 15.1% (eight of 53 schools) to  
351 35.7% (15 of 42 schools) and 11.9% (five of 42), an even bigger difference with the US and  
352 Canada. The median (25th–75th percentile) and mean ( $\pm$  SD) time were one (0–1.2) hour and 1.4  
353 ( $\pm$  2.5) hours during preclinical training, and zero (0–0) hours and 0.25 ( $\pm$  0.6) hours during  
354 clinical training, which were very similar to our previous figures.

355 Third, there were some double answers for one question. This may be because the questionnaire  
356 had been given to individual departments rather than a key faculty member aware of the overall  
357 education curriculum. It is therefore not clear whether the responses accurately reflected the  
358 current situation. However, this confusion probably reflects a lack of coordinated training on  
359 LGBT content.

360 Fourth, the survey in the US and Canada used as a comparison were conducted in 2009–2010,<sup>14</sup>  
361 approximately nine years before the current study. In 2014, after this study was conducted, the  
362 AAMC published practical, detailed and evidence-based recommendation for educational  
363 curricula on LGBT content.<sup>18</sup> Furthermore, in 2015, same-sex marriage was legalized across the  
364 US. Over the past ten years, various attempts and advances in medical education on LGBT  
365 content have been reported from the US and Canada.<sup>26,27</sup> Considering these developments, the  
366 gap between Japan and the US and Canada may currently be expanding.

367

## 368 **Conclusions**

369 The median time given to LGBT content during preclinical training was one hour, and 30.5% of  
370 respondents did not include any time. During clinical training, the median time was zero hours,  
371 only 15.1% of respondents included dedicated time and 47.2% did not cover it at all. The  
372 coverage of LGBT topics in medical education was much lower in Japan than in the US/Canada  
373 and Australia/New Zealand. To promote education about LGBT content, it is necessary to train  
374 faculty members to be able to teach these topics.

## 375 **Data sharing statement**

376 No additional data are available.

## 377 **Ethics statements**

## 378 **Patient consent for publication**

379 Not required.

## 380 **Ethics approval**

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3 381 The study was approved by the ethics committee of the Jikei University School of Medicine for  
4 382 Biomedical Research (ref no. 30-042(9063)).

### 383 **Acknowledgements**

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387 editing a draft of this manuscript.

### 388 **Figure Legends**

389 Figure 1. The flowchart of respondent selection

390 Figure 2. Hours dedicated to teaching LGBT content in Japanese medical schools

391 Footnote: \*The numbers after the decimal point were rounded up.

392 Figure 3. Proportion of schools that did not teach about LGBT content at all

393 Footnote: The data of the US and Canada was quoted from Obedin-Maliver et al.<sup>14</sup>

394

### 395 **Footnotes**

#### 396 **Author Contributors**

397 EY designed the study, was primarily responsible for data collection, data analysis, interpretation  
398 and drafted the manuscript. MM designed the study, contributed to the interpretation of data, and  
399 reviewed the manuscript. FO interpreted the results and reviewed the manuscript. All co-authors  
400 reviewed and approved the article prior to submission.

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#### 404 **Disclaimer**

405 The sponsor of this study had no role in the study design; the study conduct including collection,  
406 analysis, or interpretation of the data; the manuscript preparation; or the decision to submit the  
407 manuscript for publication.

#### 408 **Competing interests**

409 MM received lecture fees and lecture travel fees from the Centre for Family Medicine  
410 Development of the Japanese Health and Welfare Co-operative Federation. MM is an adviser of  
411 the Centre for Family Medicine Development Practice-Based Research Network, and a program



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3 412 director of the Jikei Clinical Research Program for Primary Care. MM's son-in-law worked at  
4 413 IQVIA Services Japan K.K., which is a contract research organization and a contract sales  
5 414 organization. MM's son-in-law works at SYNEOS HEALTH CLINICAL K.K. which is a  
6 415 contract research organization and a contract sales organization. EY is a former trainee of the  
7 416 Jikei Clinical Research Program for Primary Care.  
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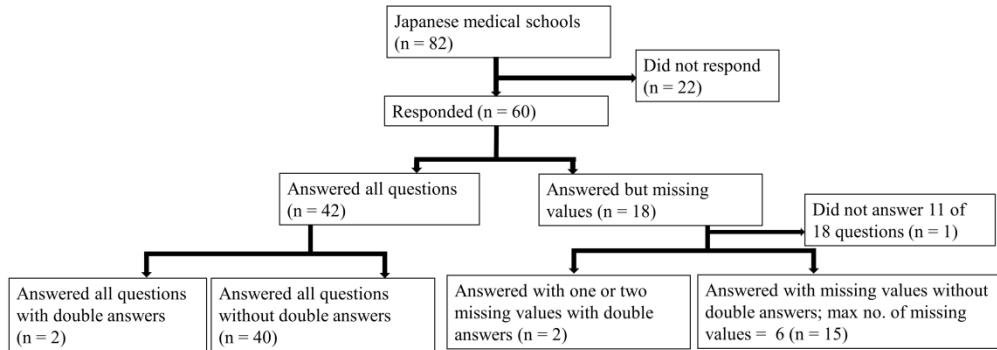


Figure 1. The flowchart of respondent selection

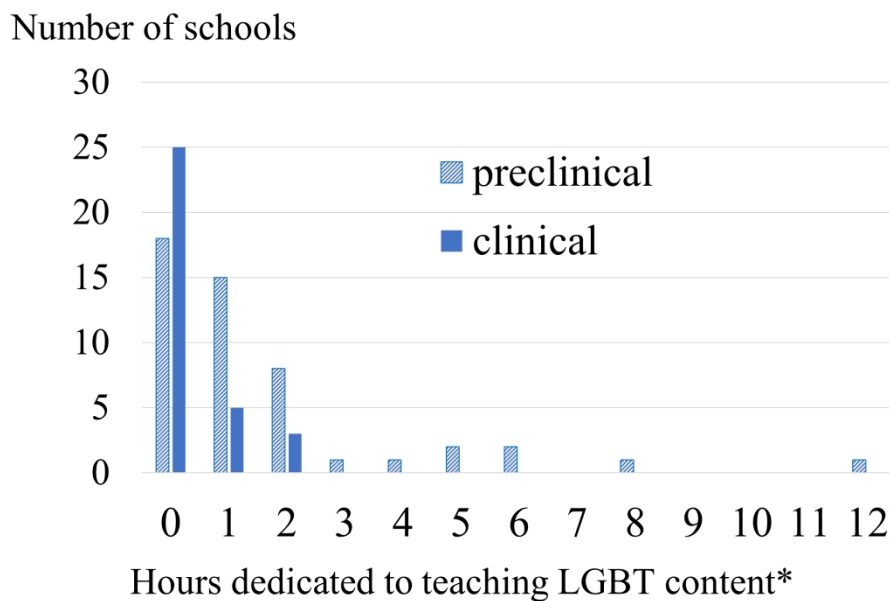


Figure 2. Hours dedicated to teaching LGBT content in Japanese medical schools

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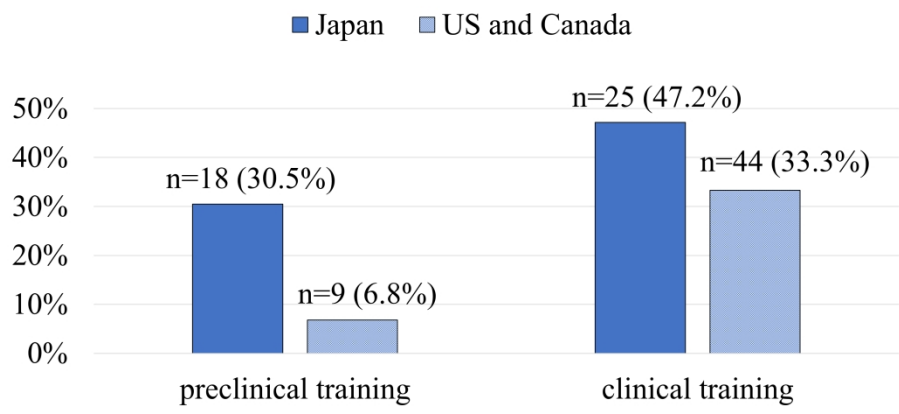


Figure 3. Proportion of schools that did not teach about LGBT content at all

STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

	Item No	Recommendation	Page No
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	4-5
Bias	9	Describe any efforts to address potential sources of bias	5-6
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	6
		(b) Describe any methods used to examine subgroups and interactions	6
		(c) Explain how missing data were addressed	6
		(d) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(e) Describe any sensitivity analyses	12
<b>Results</b>			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	6
		(b) Give reasons for non-participation at each stage	6
		(c) Consider use of a flow diagram	6
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6
		(b) Indicate number of participants with missing data for each variable of interest	6-13
Outcome data	15*	Report numbers of outcome events or summary measures	6-13
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	6-7



		(b) Report category boundaries when continuous variables were categorized	N/A
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	10-11
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	14
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15-16
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14-16
Generalisability	21	Discuss the generalisability (external validity) of the study results	15
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	16

\*Give information separately for exposed and unexposed groups.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at [www.strobe-statement.org](http://www.strobe-statement.org).