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Supplementary text. Additional evidence relevant to issues raised by early career researchers

Figure S1. Top page of special website for Social Medicine Young Retreat 2019

Table S1. Member societies belonging to the social division of the Japanese Medical Science Federation

Table S2. Time schedule of the Social Medicine Young Retreat 2019 held on March 5, 2021

Table S3. Webpages of Social Medicine Young Retreat and Forums
**Supplementary text**

Scientific evidence relevant to issues raised by early career researchers is provided below as supplementary information.

**Research**

- The difficulty in data sharing was mentioned during the early phase of the pandemic (e.g., number of COVID-19 cases among healthcare workers) \(^{(1)}\). To promote research on the impact of health-related policies, sharing data on policies is important \(^{(2)}\).
- A Japanese survey showed that 83% of 66 post-doctoral researchers in health sciences perceived the influence of COVID-19 on their research activities in 2020 \(^{(3)}\).
- COVID-19-related restrictions were associated with a decrease in research motivation and anxiety about future research activities, especially among young researchers \(^{(4)}\).
- Science Council of Japan and Japan Science and Technology Agency, which plays an important role in Japan’s Science and Technology Basic Plan, also summarized issues and solutions \(^{(5,6)}\).

**Practice**

- In legal medicine, challenges in infection control related to forensic autopsies \(^{(7)}\). A report during the COVID-19 pandemic also pointed out the importance of good infection control measures for autopsies \(^{(8)}\). Other reports during the COVID-19 pandemic also pointed out the importance of good infection control measures for autopsies \(^{(9,10)}\).
- While guidelines on implementing practice during the pandemic have been published and updated \(^{(11)}\), a report described a disparity in implementation of infection control by company size in occupational settings \(^{(12)}\). Evidence for implementation of practice is needed \(^{(13)}\).
Some practitioners felt hard to find and digest an enormous volume of information on COVID-19 (14).

A survey in Japan showed that total claimed charges decreased during the early phase of the pandemic (15). Surveys in Japan showed a 30% drop in the total number of individuals who participated in cancer screening in 2020 and 9.2% drop in the number of people with newly diagnosed cancer between 2019 and 2020 (16,17). A recent cohort study also found fewer new diagnose of early-stage gastrointestinal cancer during the COVID-19 pandemic (18).

Japanese studies have shown that income level is not clearly associated with healthcare utilization, diabetes care and telemedicine use (19-21), although these findings may have been influenced by selection bias and timing of exposure assessment.

Physician shortage in local areas has been a long-standing problem in Japan (22-24) and their working hours will be limited by law in Japan (25). To maintain the quality of medical services, information and communication technology might be helpful, especially in rural areas (26).

A recent Japanese survey showed that 54.1% of 37 occupational health practitioners experienced problems when using an online meeting service for interviews (27). Another Japanese survey found that disparities in telemedicine use had widened across generations during the pandemic (28).

Working from home or teleworking has been recommended in Japan for infection control since the early phase of the pandemic (11,29). Evidence on the effect of working from home on behavioral, health, and economic outcomes is limited in Japan (30-35). Similarly, health management for individuals working from home and effective vaccination procedure in remote settings were raised as challenges (36,37).

The importance of the flexible operation of administrative systems at various levels during
the pandemic was emphasized by participants. Examples include governmental response to COVID-19\(^{(38)}\), research funding\(^{(39)}\), approval for COVID-19 vaccines and treatments\(^{(40,41)}\), public healthcare systems\(^{(42)}\), healthcare at hospitals and clinics\(^{(43)}\), community activities by volunteers\(^{(44)}\) and education at universities\(^{(39)}\).

**Social contribution**

- Experts should respond to inappropriate information circulating on social media \(^{(45)}\). A recent report in Japan showed that the younger generation was more unsure about and unwilling to have COVID-19 vaccinations than older generations\(^{(46)}\).

- Lessons from the history of Hansen’s disease are raised in relation to bioethical problems and violation of any human rights \(^{(47,48)}\).

- Development of resources for risk communication was recommended by Japanese government \(^{(49)}\), while only limited opportunities are available for researchers to receive training or education. Evaluation of researchers’ performance in social contribution is unclear for early career researchers, who are often in a precarious employment position \(^{(50)}\). The roles of experts and governments in risk communication were a major issue during the early phase of the pandemic \(^{(51)}\).

**Education**

- Live streaming for remote teaching was used in only 25.5% of universities in Japan in 2016, but used at most Japanese universities during the pandemic\(^{(39,52)}\).

- A copyright exemption in teaching was announced by the government \(^{(53)}\). The extent of instruction to teachers about copyright and personal information protection issues might have varied by institution \(^{(54-57)}\).

- Problems related to online learning have been pointed out in Japan by researchers in
medical education since the early phase of the pandemic (58,59). These findings on education during the pandemic will be important in improving the quality (60).

- Increased suicide rates among undergraduate students were observed during the pandemic (61). First-year university students in 2020 had higher academic distress than the previous year’s students (62).
- The disparity in the information environment was identified during the very early phases of the pandemic (63) while online learning has been introduced everywhere. It seems likely that online learning will remain a feature of universities even after the end of the pandemic (64).

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Figure S1. Top page of special website for Social Medicine Young Retreat 2019. The image is reprinted with permission from The Japanese Medical Science Federation and Senkyo Co., Ltd.
| Name                                                                 | Founding year | Website URL                     |
|----------------------------------------------------------------------|---------------|---------------------------------|
| Japanese Society of Legal Medicine                                  | 1887          | http://www.jslm.jp/en/index.html |
| Japanese Society for the History of Medicine                         | 1892          | http://jsmh.umin.jp/index_e.html |
| The Association of Insurance Medicine of Japan                       | 1901          | https://aimj.org/                |
| Japanese Association of Transportation Medicine                      | 1914          | http://jatm.umin.jp/             |
| Japanese Society of Medical Instrumentation                          | 1923          | https://www.jsmi.gr.jp/          |
| Japan Society for Occupational Health                               | 1929          | https://www.sanei.or.jp/?mode=view&cid=352 |
| The Japanese Society for Hygiene                                    | 1929          | http://www.nihon-eisei.org/en/   |
| The Japanese Society of Health and Human Ecology                     | 1930          | http://jshhe.com/index.htm       |
| The Japan Society of Medical Entomology and Zoology                  | 1943          | https://server51.joeswebhosting.net/~js4308/en/ |
| Japanese Society of Public Health                                   | 1946          | https://www.jsph.jp/en/index.html |
| The Japanese Society of Physical Fitness and Sports Medicine         | 1949          | http://www.jspfsm.umin.ne.jp/en/index.htm |
| The Japanese Association of Correctional Medicine                    | 1951          | http://jams.med.or.jp/members-s/52.html |
| The Japanese Association of Rural Medicine                          | 1952          | http://www.jarm.jp/              |
| Japanese Society of Occupational Medicine and Traumatology           | 1953          | http://www.jsomt.jp/             |
| Japan Society for Healthcare Administration                          | 1963          | http://www.jscha.gr.jp/jscha_en/index.html |
| No. | Organization                                | Year  | Website                                      |
|-----|--------------------------------------------|-------|----------------------------------------------|
| 16  | The Japan Society for Medical Education    | 1969  | http://jsme.umin.ac.jp/eng/index.html        |
| 17  | Japan Association for Medical Informatics  | 1983  | http://jami.jp/english/                      |
| 18  | Japan Epidemiological Association          | 1991  | https://jeaweb.jp/en/                        |
| 19  | Japanese Association for Disaster Medicine | 1995  | https://jadm.or.jp/contents/en/              |

Data were retrieved from https://jams.med.or.jp/members-s/index.html as of Apr 21, 2021
Table S2. Time schedule of the Social Medicine Young Retreat 2019 held on March 5, 2021

| Time course | Contents |
|-------------|----------|
| 8:30-9:00   | Video introduction of *Schistosoma japonicum* |
| 9:00-9:15   | Opening ceremony |
| 9:15-9:25   | Self-introduction |

**Group work session**

| Time course | Contents |
|-------------|----------|
| 9:25-10:00  | In-group introduction and free-style conversation |
| 10:00-10:50 | First group work |
| 10:50-11:00 | Break |
| 11:00-11:45 | First presentation |
| 11:45-12:05 | Second group work |
| 12:05-12:30 | Second presentation and feedback from the senior member |

**Closing session**

| Time course | Contents |
|-------------|----------|
| 12:30-12:40 | Taking group photos of participants |
| 12:40-12:50 | Closing ceremony |
Table S3. Webpages of Social Medicine Young Retreat and Forums

| Name of the event                             | Date                                      | Website URL                                  |
|-----------------------------------------------|-------------------------------------------|----------------------------------------------|
| Social Medicine Young Retreat 2019            | Thursday-Friday, March 5-6, 2020 (postponed) | [https://www.jmsf.or.jp/news/page_340.html](https://www.jmsf.or.jp/news/page_340.html) |
|                                               | Friday, March 5, 2021                     | [https://www.senkyo.co.jp/sretreat2019/](https://www.senkyo.co.jp/sretreat2019/)    |
| 1st Social Medicine Young Forum               | Saturday, June 26, 2021                   | [https://www.jmsf.or.jp/news/page_729.html](https://www.jmsf.or.jp/news/page_729.html) |
| 2nd Social Medicine Young Forum               | Friday, August 27, 2021                   | [https://www.jmsf.or.jp/news/page_938.html](https://www.jmsf.or.jp/news/page_938.html) |
| 3rd Social Medicine Young Forum               | Saturday, December 4, 2021                | [https://www.jmsf.or.jp/news/page_312.html](https://www.jmsf.or.jp/news/page_312.html) |
| 4th Social Medicine Young Forum               | Friday, March 4, 2022                     | [https://www.jmsf.or.jp/news/page_398.html](https://www.jmsf.or.jp/news/page_398.html) |