


# Observational study of financial and non-financial conflicts of interest among the Japanese government advisory board members concerning coronavirus disease 2019

Hanano Mamada<sup>a,b</sup>, Anju Murayama<sup>a,c,\*</sup> , Akihiko Ozaki, MD<sup>a,d</sup>, Takanao Hashimoto, PhD<sup>a,e</sup>, Hiroaki Saito, MD<sup>f</sup>, Toyooki Sawano, MD<sup>g</sup>, Erika Yamashita<sup>a</sup>, Divya Bhandari, MHS<sup>a</sup>, Sunil Shrestha, PharmD<sup>h</sup>, Tetsuya Tanimoto, MD<sup>a,i</sup>

## Abstract

This cross-sectional analysis aimed to assess the extent of conflicts of interest among the Japanese government coronavirus disease 2019 (COVID-19) advisory board members and elucidate the accuracy of conflicts of interest (COI) disclosure and management strategies. Using the payment data from all 79 pharmaceutical companies in Japan between 2017 and 2019 and direct research grants from the Japanese government between 2019 and 2020, we evaluated the extent of financial and non-financial COI among all 20 Japanese government COVID-19 advisory board members. The Ethic Committee of the Medical Governance Research Institute approved this study. Japanese government COVID-19 advisory board members were predominantly male (75.0%) and physicians (50.0%). Between 2019 and 2020, 2 members (10.0%) received a total of \$819,244 in government research funding. Another 5 members (25.0%) received \$532,127 in payments, including \$276,722 in personal fees, from 31 pharmaceutical companies between 2017 and 2019. The average value of the pharmaceutical payments was \$9155 (standard deviation: \$12,975). Furthermore, neither the Ministry of Health, Labor, and Welfare nor the Japanese Cabinet Secretariat disclosed financial or non-financial COI with industry. Additionally, the government had no policies for managing COI among advisory board members. This study found that the Japanese government COVID-19 advisory board had financial and non-financial COI with pharmaceutical companies and the government. Furthermore, personal communication received as part of this research indicated that there were no rigorous COI management strategies for the COVID-19 advisory board members. Any government must ensure the independence of scientific advisory boards by implementing more rigorous and transparent management strategies that require the declaration and public disclosure of all COI.

**Abbreviations:** COI = conflicts of interest, COVID-19 = coronavirus disease 2019, EMNCDCC = Expert Meeting on Novel Coronavirus Disease Control Committee, SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2, SNCDC = Subcommittee on Novel Coronavirus Disease Control, U.S. = United States.

**Keywords:** advisory board, conflict of interest, coronavirus disease 2019 (COVID-19), ethics, Japan, SARS-CoV-2

HM and AM contributed equally to this work.

This study was funded in part by the Medical Governance Research Institute. This non-profit enterprise receives donations from pharmaceutical companies, including Ain Pharmaciez, Inc., other organizations, and private individuals. This study also received support from the Tansa (formerly known as Waseda Chronicle), an independent non-profit news organization dedicated to investigative journalism. Ain Pharmaciez had no role in the design and conduct of the study, the collection, management, analysis, and interpretation of the data, the preparation, review, and approval of the manuscript, or the decision to submit the manuscript for publication. Tansa was engaged in the collection and management of the payment data, but had no role in the design and conduct of the study, the analysis and interpretation of the data, the preparation, review and approval of the manuscript, or the decision to submit the manuscript for publication.

As non-financial conflicts of interest, Anju Murayama, Akihiko Ozaki, Hiroaki Saito, Toyooki Sawano, and Tetsuya Tanimoto have several research articles related to the conflicts of interest among healthcare professionals in Japan. Hiroaki Saito received personal fees from TAIHO Pharmaceutical Co. Ltd outside the scope of the submitted work. Akihiko Ozaki and Tetsuya Tanimoto received personal fees from Medical Netwo. rk Systems outside the scope of the submitted work. Tetsuya Tanimoto also received personal fees from Bionics Co. Ltd, outside the scope of the submitted work. This does not alter our adherence to Medicine policies on sharing data and materials.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

<sup>a</sup> Medical Governance Research Institute, Minato-ku, Tokyo, Japan, <sup>b</sup> Akita University School of Medicine, Akita, Japan, <sup>c</sup> Tohoku University School of Medicine, Sendai, Miyagi, Japan, <sup>d</sup> Department of Breast and Thyroid Surgery, Jyoban Hospital of Tokiwa Foundation, Iwaki, Fukushima, Japan, <sup>e</sup> Department of Pharmacy, Sendai City Medical Center, Sendai, Miyagi, Japan, <sup>f</sup> Department of Internal medicine, Soma Central Hospital, Soma, Fukushima, Japan, <sup>g</sup> Department of Surgery, Jyoban Hospital of Tokiwa Foundation, Iwaki, Fukushima, Japan, <sup>h</sup> School of Pharmacy, Monash University Malaysia, Jalan Lagoon Selatan, Bandar Sunway, Selangor Darul Ehsan, Malaysia, <sup>i</sup> Department of Internal Medicine, Navitas Clinic, Kawasaki, Kanagawa, Japan.

\* Correspondence: Anju Murayama, Tohoku University School of Medicine, Sendai, Miyagi 980-8575, Japan (e-mail: ange21tera@gmail.com).

Copyright © 2023 the Author(s). Published by Wolters Kluwer Health, Inc. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial License 4.0 (CCBY-NC), where it is permissible to download, share, remix, transform, and buildup the work provided it is properly cited. The work cannot be used commercially without permission from the journal.

How to cite this article: Mamada H, Murayama A, Ozaki A, Hashimoto T, Saito H, Sawano T, Yamashita E, Bhandari D, Shrestha S, Tanimoto T. Observational study of financial and non-financial conflicts of interest among the Japanese government advisory board members concerning coronavirus disease 2019. *Medicine* 2023;102:4(e32776).

Received: 4 December 2022 / Received in final form: 5 January 2023 / Accepted: 6 January 2023

<http://dx.doi.org/10.1097/MD.00000000000032776>

## 1. Introduction

The United States (U.S.) National Academy of Medicine defines conflicts of interest (COI) as “circumstances that create a risk that professional judgments or actions regarding a primary interest will be unduly influenced by a secondary interest.”<sup>[1]</sup> Both financial and non-financial COI exist.<sup>[1]</sup> According to a U.S. Preventive Services Task Force review, non-financial COI include competing beliefs, public comments, interests, advocacy, or policy positions, substantial career efforts, or intellectual ones. Intellectual COI include study authorship or grant funding directly related to the topic that creates the potential for bias and compromises objectivity in judgment.<sup>[2]</sup> Given the nature of non-financial COI, they could be particularly prominent individuals in positions close to public authorities. Consequently, non-financial COI may be even more influential than financial ones.<sup>[2,3]</sup> While financial COI garner a great deal of attention over transparency and financial thresholds,<sup>[4]</sup> non-financial COI receive little attention, even among national health policy experts.<sup>[5]</sup>

This lack of discussion over non-financial COI has important implications for the ongoing coronavirus 2019 (COVID-19) pandemic. As of December 31, 2022, more than 56,000 people have died from COVID-19 in Japan.<sup>[6]</sup> Increasingly, accumulating evidence from developing and developed countries suggests the potential to minimize the damage of diseases like COVID-19 by appropriately assigning competent and fair-minded experts to government advisory boards. For governments to gain unbiased, evidence-based advice from medical and public health experts and implement evidence-based health policies relating to COVID-19, proper management of these experts COI is essential in any country.<sup>[4,7]</sup>

Unfortunately, the Japanese government lags behind other countries in several COVID-19 prevention strategies, including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection control and vaccination efforts.<sup>[8]</sup> The percentage of the 2 dose vaccinated people (about 80.0% of all Japanese population) were currently higher than in several developed countries. However, since the start of vaccination in Japan was delayed compared to other countries in group of 7,<sup>[9,10]</sup> as of early June 2021 when this article was written, the number of people vaccinated was lower consequently. Japan has also received global criticism for hosting the Olympic Games despite poorly developed strategies for managing COVID-19.<sup>[9,10]</sup> Therefore, it remains vital to investigate the backgrounds of the experts who developed the COVID-19 policies in Japan and how they managed their COI. This cross-sectional study aimed to evaluate the extent and prevalence of financial and non-financial COI between pharmaceutical companies and the Japanese government and elucidate the accuracy of disclosure and management strategies for COI among the COVID-19 advisory board members.

## 2. Methods

In response to the domestic spread of SARS-CoV2, on February 24, 2020, the Japanese government established the Expert Meeting on Novel Coronavirus Disease Control Committee (EMNCDCC) under the Ministry of Health, Labor, and Welfare. This committee consisted of infectious disease, microbiology, and public health experts, charged with developing strategies to prevent COVID-19 transmission. A subsequent reorganization followed in July 2020 to tackle this infectious disease from a more multidimensional perspective. The changes included expanding the committee to include economists, hospital managers, and jurists, rebranding as the Subcommittee on Novel Coronavirus Disease Control (SNCDC), and reassignment under the Cabinet Secretariat. We identified the current SNCDC composition, as of June 1, 2021, from the Japanese Cabinet Secretariat website.<sup>[11]</sup>

We then collected demographic data on the most recent SNCDC members, including gender, position, and specialty, from official documents, and webpage of affiliated institutions. For the board members with a Japanese medical license, the gender of the board members was verified by the database of medical physician published by the Japanese Ministry of Health, Labor and Welfare ([https://licenseif.mhlw.go.jp/search\\_isei/jsp/top.jsp](https://licenseif.mhlw.go.jp/search_isei/jsp/top.jsp)). There were no publicly available official gender data for the non-physician board members, and thus the photographs on the official page of affiliated institutions after a manual Google search, as well as news articles such as interview with the board members in the major national newspapers. To ensure our gender classification, we contacted to the Japanese Cabinet Secretariat about whether our gender judgement based on the photographs and extraction from the physician database was correct. We extracted the h-index for researchers and physicians using the Scopus database (<https://www.scopus.com/freelookup/form/author.uri>), or when not accessible, Google Scholar to evaluate the academic performance of individual SNCDC members, as described previously.<sup>[12]</sup> For financial COI, we examined payment records from pharmaceutical companies. Payment data included speaking fees, writing fees, consulting fees, and scholarship donations disclosed by 79 Japanese pharmaceutical companies between 2017 and 2019. Most international professional and academic associations consider the 3 prior years as an appropriate period for COI disclosure.<sup>[2]</sup> The latest available payment data for analysis in Japan came from 2018, as in our previous studies.<sup>[13,14]</sup> For research funding from the government, we used the Research Program on Emerging and Reemerging Infectious Diseases in 2019 (<https://www.mhlw.go.jp/seisakunitsuite/bunya/hokabunya/kenkyujigyou/hojokin-koubo-2019/gaiyo/16.html>) and 2020 (<https://www.mhlw.go.jp/seisakunitsuite/bunya/hokabunya/kenkyujigyou/hojokin-koubo-2020/gaiyo/16.html>). This program dispensed and publicly disclosed funding awards from the Ministry of Health, Labor, and Welfare and was considered as potential non-financial COI with the government.

We conducted descriptive analysis for both financial and non-financial COI among the SNCDC members with the government and industry. Japanese yen were converted to U.S. dollars using 2020 average monthly exchange rate of 106.8 per U.S. dollars. Furthermore, when we could not find information on COI disclosure among the SNCDC members, we contacted the Japanese Cabinet Secretariat and the Ministry of Health, Labor, and Welfare about their disclosure and management strategies for the EMNCDCC and SNCDC by telephone.

The Ethics Committee of the Medical Governance Research Institute approved this study on June 5, 2020. (ID: MG2018-04-0516) Informed consent was waived and direct contact to the related organizations, including the Japanese Cabinet Secretariat and the Japanese Ministry of Health, Labor, and Welfare, were allowed by the Ethics Committee of the Medical Governance Research Institute.

## 3. Results

As of June 1, 2021, the 20 identified current SNCDC members were predominantly male (75.0%), physicians (50.0%), and had a median h-index of 18.5 (Interquartile ranges: 4.5–32) (Table 1). Additionally, 2 (10.0%) received a total of \$819,244 in research payments from the Ministry of Health, Labor, and Welfare between 2019 and 2020, while 5 (25.0%) received \$553,054 in payments that included \$287,604 in personal payments and \$265,449 as scholarships from 32 pharmaceutical companies between 2017 and 2019 (Table 2). The average (median, MN) pharmaceutical company payments made to the 20 advisory board members were \$17,513 (\$4070) in total. Of the 32 pharmaceutical companies making payments to the advisory board members, Pfizer (\$294,954) made the largest

**Table 1****Panel member list of the Subcommittee on Novel Coronavirus Disease Control.**

Name	Role	Gender	Physician	Specialty	Affiliation	H index
A	Chair panelist	Male	Yes	Public health	Chairperson of the Japan Community Healthcare Organization (national institution) Chairperson of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	4
B	Co-chair panelist	Male	Yes	Infectious disease	Director of the National Institution of Infectious Disease (national institution) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board chairperson of Ministry of Health, Labor, and Welfare (government advisor)	67
C	Panelist	Male	Yes	Infectious disease	Director of infectious disease, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital (public hospital) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	11
D	Panelist	Male	Yes	Public health	President of the Kawasaki City Institute for Public Health (public institution) Special Advisor to the Japanese Cabinet (government advisor) Co-chairperson of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	32
E	Panelist	Male	Yes	Microbiologist	Full professor, Tohoku University, Department of Microbiology (national university) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	32
F	Panelist	Male	Yes	Pediatrics	Executive Director of the Japan Medical Association Panel member of Ministerial Meeting on Measures Against Avian Influenza (government advisor) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	2
G	Panelist	Male	Yes	Infectious disease	Full professor, Toho University, Department of Microbiology and Infectious Diseases (private university) President of Japanese Society for Clinical Microbiology Former president of Japanese Association for Infectious Diseases Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) Panel member of Ministerial Meeting on Measures Against Avian Influenza (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	42
H	Extra panelist	Male	Yes		Co-president of Japanese Association of Medical Care Corporations President of the medical corporation HOSPY group (for-profit company) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	–
I	Extra panelist	Female	Yes	Public health	Co-president of Japanese Association of Public Health Center Directors Director of Katsushika City Health Center (public institution) Social medicine specialist/ instructor	–
J	Panelist	Male	No	Health communication	Healthcare communication planner Former official of the Ministry of Health, Labor, and Welfare (government official) Former panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	–

*(Continued)*

**Table 1**  
(Continued)

Name	Role	Gender	Physician	Specialty	Affiliation	H index
K	Panelist	Male	No	–	Deputy executive director of the Japanese Trade Union Confederation Former chief general secretary of the Tokyo Electric Power Worker's Union Former executive director of the Federation of Electric Power Related Industry Worker's Unions of Japan Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	–
L	Panelist	Male	No	Economist	Professor, Osaka University Graduate School of Economics, Department of Scientific Information and Public Policy (national university) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	26
M	Panelist	Male	No	Insurance	Chamber of the Tokyo Chamber of Commerce and Industry Vice president of AXA Life Insurance Co., Ltd. (for-profit company) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	–
N	Panelist	Male	No	Economist	Principal Investigator of the Tokyo Foundation for Policy Research (Private nonprofit think tank) Visiting Professor, Keio University, Faculty of Economics (private university) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	5
O	Panelist	Female	No	Lawyer	Lawyer of Kasumigaseki Law Offices Panel member of Ministerial Meeting on Measures Against Avian Influenza (government advisor) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) Former panel member of Administrative Appeal Committee of the Ministry of Internal Affairs and Communications (government advisor) Former panel member of research misconduct and conflict of interest committee at the Institute of Statistical Mathematics (public institution) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	–
P	Panelist	Male	No	Politician	Governor of Tottori Prefecture in Japan Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	–
Q	Panelist	Female	No	Journalist	General Manager of the Research Division of the Yomiuri Shimbun Tokyo Head Office (for-profit company) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	–
R	Panelist	Female	No	Public Health	Professor, Department of Public Health, Institute of Medical Science, University of Tokyo (national university) Panel member of Cabinet Secretariat Health and Medical Strategy Promotion Expert Committee (government advisor) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor) COVID-19 advisory board member of Ministry of Health, Labor, and Welfare (government advisor)	13
S	Extra panelist	Male	No	Jurist	Professor, Keio University Law School (private university) Public Interest Member of Central Labor Relations Commission, Ministry of Health, Labor, and Welfare (government advisor) Panel member of the Advisory Council on Countermeasures against Novel Influenza and Other Diseases (government advisor)	1
T	Extra panelist	Female	No	Travel industry	Chairman of the Board of All Nippon Airways Research Institute (private institution) Former senior vice president of the All Airways Co., Ltd. (for-profit company) Director of East Japan Railway Company (for-profit company) Director of Sumitomo Mitsui Trust Holdings, Inc. (for-profit company)	–
Total, n (%)		Male: 15 (75.0) Female: 5 (25.0)	10 (50.0)			Median: 18.5 Interquartile ranges: 4.5–32

COVID-19 = coronavirus disease 2019.

**Table 2**

**Payments to the Subcommittee on Novel Coronavirus Disease Control panel members from pharmaceutical companies between 2017 and 2019 and from the Ministry of Health, Labour, and Welfare between 2019 and 2020.**

Name	Pharmaceutical company payments (\$)			Japanese government payments (\$)		
	Personal payments	Scholarship donations	Total	In 2019	In 2020	Total received (\$)
C	9324	0	9324	0	0	9324
D	27,848	0	27,848	212,996	195,890	436,734
E	0	0	0	0	0	0
F	0	0	0	0	0	0
G	222,002	265,449	487,451	0	0	487,451
H	22,840	0	22,840	0	0	22,840
R	5590	0	5590	0	215,356	220,946
Total	287,604	265,449	553,054	212,996	411,245	1177,295

individual payments, followed by Astellas Pharma Inc. (\$60,860) and Kyorin Pharmaceutical Company, Limited (\$44,730).

Surprisingly, we found that neither the Ministry of Health, Labor, and Welfare, nor the Japanese Cabinet Secretariat, disclosed the financial and non-financial COI of SNCDC members. Following our inquiry about COI, an official representative of the Japanese Cabinet Secretariat indicated they did not ask the SNCDC members to declare their COI. Additionally, SNCDC members were selected from an existing government advisory board, the Advisory Council on Countermeasures against Novel Influenza and Other Diseases. Similarly, the Ministry of Health, Labor, and Welfare did not ask the members of the EMNCDC to declare their COI. Thus, members of either committee were not required to declare or disclose their COI.

#### 4. Discussion

We found substantial financial and non-financial COI among the COVID-19 advisory board members with pharmaceutical companies and the Japanese government itself. Additionally, personal communication received as part of this research indicated that no COI policies or management strategies exist to ensure disclosure of COI by the COVID-19 advisory board members. With the recent global demand for greater transparency and growing evidence that financial and non-financial COI can influence professional judgment and behaviors,<sup>[15–19]</sup> there remains a strong need for integrity among healthcare professionals. Current trends in developed nations favor the full public disclosure of all financial and non-financial COI, coupled with rigorous and appropriate management, in building and maintaining public trust.<sup>[20–23]</sup> The first step in this process requires improved transparency, which inherently relies on full COI declaration, and disclosure by healthcare professionals. Indeed, for this reason, several other government COVID-19 advisory boards require members to declare COI for public disclosure. Such organizations include the United Kingdom's (U.K.) Scientific Advisory Group for Emergencies<sup>[24]</sup> and the Joint Committee on Vaccination and Immunization,<sup>[4,25]</sup> the Scottish Government's Covid-19 Advisory Group,<sup>[26]</sup> the COVID-19 Immunity Task Force in Canada,<sup>[27]</sup> and in the U.S. the Advisory Committee on Immunization Practice in Centers for Disease Control and Prevention<sup>[28,29]</sup> and the COVID-19 authorization committees at the U.S. Food and Drug Administration.<sup>[4]</sup> Unfortunately, despite most SNCDC members having close ties to the Japanese government, whether from federal research funding, current employment, or past or present service on government committees, it was suggested that SNCDC members were not required to, nor have they voluntarily declared or disclosed their COI even a year after the onset of the COVID-19 pandemic. This poses a potentially serious problem for COI management. Suppose the public and outside experts do not have access to the expert decision-making processes of governments or government advisory

bodies on the COVID-19 pandemic. In this case, they can never evaluate previous policies and prepare for future pandemics. Thus, the Japanese government should urgently implement appropriate COI management strategies centered on greater transparency, ensuring the immediate and complete disclosure of SNCDC members' COI.

Notably, we found that 2 SNCDC members received more than \$250,000 in research grants from the Ministry of Health, Labor, and Welfare for studies on COVID-19 in 2020. Funding of this sort, straight from the government for research directly related to SNCDC functions, represents non-financial COI as recently defined by the U.S. Preventive Services Task Force and other international organizations.<sup>[2]</sup> Such direct non-financial COI between the government and advisory board members may inappropriately influence future recommendations. Instead, government experts should manage their COI appropriately and make recommendations based solely on scientific evidence, uninfluenced by their non-financial COI with the government. This is critical as subject matter experts should act and frame their opinions based on evidence in tackling the pandemic on behalf of the public and preventing further damage to human lives. Unfortunately, to our knowledge, no formal definition of non-financial COI or strategies addressing COI management exist in Japan. Although the influence of non-financial COI among the government advisory board members on their actions and recommendations is beyond our study setting, all such panelists in any country should recognize how COI might influence their behavior and manage them appropriately.<sup>[19]</sup>

As for financial COI, 5 SNCDC members received payments from pharmaceutical companies developing or manufacturing COVID-19 drugs or vaccines, including Pfizer, whose vaccines were the first approved in Japan. Other companies making payments to SNCDC members include Astellas Pharma Inc, which have provided compounds in response to a call for cooperation from the Ministry of Health, Labor and Welfare's National Institute of Infectious Diseases, "Basic Screening Plan for Drugs Used to Treat New coronavirus Infectious Diseases." Also, among the 5 SNCDC members receiving personal payments from pharmaceutical companies, 2 received more than \$25,000, and 1 received \$222,002 between 2017 and 2019. Additionally, in 2017, 1 panelist received \$265,449 in scholarship donations from 11 pharmaceutical companies, including \$63,670 from Daiichi Sankyo, the manufacturer of the COVID-19 vaccine developed by AstraZeneca in Japan; \$42,135 from Sumitomo Dainippon Pharma; and \$37,453 from FUJIFILM, whose potential drug for treating COVID-19, favipiravir (avi-gan), is in phase III trial sponsored by the Ministry of Health, Labor, and Welfare.

The ongoing debate over financial COI among government advisory board members extends beyond Japan. It includes other developed nations like the U.K. and the U.S.<sup>[4]</sup> As an investigative journalist, Thacker (2020) reported that members of the Scientific Advisory Group for Emergencies were required

to declare their financial COI. However, the U.K. government failed to disclose this information to the British Medical Journal in 2020.<sup>[7]</sup> Additionally, Thacker (2021) found that several members of the U.K. Joint Committee on Vaccines and Immunization had undisclosed financial relationships with pharmaceutical companies, and similarly, that members of the U.S. Food and Drug Administration had received substantial sums from pharmaceutical companies.<sup>[4]</sup> Given that most international healthcare organizations and professional organizations set the current reporting periods for financial COI declaration,<sup>[2,30]</sup> undoubtedly the receipt of payments from the pharmaceutical companies developing or manufacturing COVID-19 drugs and vaccines represent financial COI. Such information must be managed and disclosed to the public. However, it was indicated that the EMNCDCC and SNCDC members were not required to declare their COI even to the government.

Unfortunately, some of the recommendations made by both the EMNCDCC and SNCDC members and the Japanese government may have contributed to spread of the COVID-19 pandemic and delay in economic recovery. First, both the EMNCDCC and SNCDC members emphasized controlling clusters, relying heavily on behavior modification, and preventing infections in enclosed or crowded spaces and close contact environments, collectively known as the “3Cs.”<sup>[31]</sup> However, these strategies failed to prevent further transmission in the presence of large numbers of COVID-19 cases with unknown transmission routes.<sup>[32]</sup> Indeed, the Japanese government declared and extended a state emergency several times in response to mounting case numbers with unidentified origins.

Turning to the Tokyo Olympic and Paralympic Games, our previous research indicated that the SNCDC had offered no detailed management strategies despite global scientific criticism, and the Tokyo Olympic and Paralympic Games were held without scientific enough assessment.<sup>[33]</sup> However, some of the SNCDC members had recruited experts and submitted their own proposals for the Tokyo Olympic and Paralympic Games, although they had made the recommendations not as a SNCDC member. The existence of an unclear COI may be one of the reasons behind such actions.

Scientific advisory bodies like the SNCDC must provide management recommendations for preventing SARS-CoV-2 transmission. There remains no valid explanation of why the SNCDC members backed the Japanese government in deviating from established global strategies for preventing SARS-CoV-2 transmission. Nevertheless, it was indicated that Japanese COI management might have ignored public health experts' concerns based on rigorous scientific evidence and draw conclusions aimed at economics and politics. Our findings indicated that the possibility of the existence of the close relationships between the SNCDC members and the government, combined with the worst possible COI transparency policies, might reasonably explain this issue. At very least, we recommend that the Japanese government provide full disclosure of SNCDC members COI for the past 3 years and incorporate input from clinicians and subject matter experts with experience from different disciplines such as geneticists, data scientists, immunologists, statisticians, and infectious disease and public health experts with alternative views. These same strategies already provide the basis for establishing trustworthy clinical practice guidelines widely used throughout Japan.<sup>[34,35]</sup> Presently, the Japanese government must reconsider its priorities, economic growth based on the inadequate advice from muzzled experts or rigorous scientifically backed evidence governing sound public health policy.

This study has several limitations. First, due to the limited data availability, the time frame of disclosed pharmaceutical company payments did not overlap concisely with the time frame of advisory board member COI disclosure, as we have acknowledged in this study. Nevertheless, this study still

provides insight into the magnitude of undeclared COI among the SNCDC members have with pharmaceutical companies and the Japanese government. Second, we assessed COI between the SNCDC members and the government-funded research grants on infectious diseases from the Ministry of Health, Labor, and Welfare. Although there may be other sources of research grants from the Japanese government, grants for infectious disease studies would most likely directly impact the opinions and suggestions of SNCDC members. Despite these limitations, to the best of our knowledge, this is the first study comprehensively assessing financial and non-financial COI among the Japanese government COVID-19 advisory board.

## 5. Conclusions

We found that COVID-19 advisory board members had financial and non-financial COI with pharmaceutical companies and the Japanese government. Additionally, personal communication received as part of this research indicated that there were no rigorous management strategies for COI declaration and government disclosure to the public. This possibility of a lack of proper COI management might have unduly influenced advisory board members' recommendations. Therefore, the Japanese government must move quickly to ensure the independence of scientific advisory committees and implement more rigorous and transparent COI management strategies that include full declaration and disclosure to the public.

## Acknowledgments

The authors appreciate the Tansa for collecting payment data and Dr Derek Hagman for professional language editing.

## Author contributions

**Conceptualization:** Hanano Mamada, Anju Murayama, Takanao Hashimoto, Hiroaki Saito, Toyoaki Sawano, Divya Bhandari, Tetsuya Tanimoto.

**Data curation:** Anju Murayama, Erika Yamashita.

**Formal analysis:** Hanano Mamada, Anju Murayama.

**Investigation:** Hanano Mamada, Anju Murayama.

**Methodology:** Hanano Mamada, Anju Murayama, Toyoaki Sawano, Tetsuya Tanimoto.

**Project administration:** Anju Murayama.

**Resources:** Anju Murayama, Akihiko Ozaki, Hiroaki Saito, Toyoaki Sawano, Erika Yamashita.

**Software:** Anju Murayama.

**Supervision:** Anju Murayama, Akihiko Ozaki, Hiroaki Saito, Toyoaki Sawano, Tetsuya Tanimoto.

**Visualization:** Hanano Mamada, Anju Murayama.

**Writing – original draft:** Hanano Mamada, Anju Murayama, Tetsuya Tanimoto.

**Writing – review & editing:** Anju Murayama, Akihiko Ozaki, Takanao Hashimoto, Hiroaki Saito, Toyoaki Sawano, Erika Yamashita, Divya Bhandari, Sunil Shrestha, Tetsuya Tanimoto.

## References

- [1] Institute of Medicine. Clinical Practice Guidelines we can Trust. US: The National Academies Press. 2011:290.
- [2] Ngo-Metzger Q, Moyer V, Grossman D, et al. Conflicts of interest in clinical guidelines: update of U.S. preventive services task force policies and procedures. *Am J Prev Med.* 2018;54(1, Supplement 1):S70–80.
- [3] Choudhry NK, Stelfox HT, Detsky AS. Relationships between authors of clinical practice guidelines and the pharmaceutical industry. *JAMA.* 2002;287:612–7.
- [4] Thacker PD. Covid-19: How independent were the US and British vaccine advisory committees? *BMJ.* 2021;373:n1283.

- [5] Horton R. The Covid-19 Catastrophe: What's Gone Wrong and How to Stop it Happening Again. US: John Wiley & Sons. 2021.
- [6] Johns Hopkins University Center for Systems Science and Engineering. Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU). 2020. Available at: <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd-40299423467b48e9ecf6>. [access date December 31, 2022].
- [7] Thacker PD. Conflicts of interest among the UK government's COVID-19 advisers. *BMJ*. 2020;371:m4716.
- [8] Shimizu K, Tokuda Y, Shibuya K. Japan should aim to eliminate covid-19. *BMJ*. 2021;372:m294.
- [9] Sparrow AK, Brosseau LM, Harrison RJ, et al. Protecting olympic participants from COVID-19 - the urgent need for a risk-management approach. *N Engl J Med*. 2021;385:e2.
- [10] Shimizu K, Sridhar D, Taniguchi K, et al. Reconsider this summer's olympic and paralympic games. *BMJ*. 2021;373:n962.
- [11] Japanese Cabinet Secretariat. Subcommittee on novel coronavirus disease control. Available at: <https://www.cas.go.jp/jp/seisaku/ful/yusikisyakaigi.html>. [access date June 1, 2021].
- [12] Eloy JA, Bobian M, Svider PF, et al. Association of gender with financial relationships between industry and academic otolaryngologists. *JAMA Otolaryngol Head Neck Surg*. 2017;143:796–802.
- [13] Murayama A, Ozaki A, Saito H, et al. Pharmaceutical company payments to dermatology clinical practice guideline authors in Japan. *PLoS One*. 2020;15:e0239610.
- [14] Ozaki A, Saito H, Senoo Y, et al. Overview and transparency of non-research payments to healthcare organizations and healthcare professionals from pharmaceutical companies in Japan: analysis of payment data in 2016. *Health Policy*. 2020;124:727–35.
- [15] Norris SL, Burda BU, Holmer HK, et al. Author's specialty and conflicts of interest contribute to conflicting guidelines for screening mammography. *J Clin Epidemiol*. 2012;65:725–33.
- [16] Nejtgaard CH, Bero L, Hrobjartsson A, et al. Association between conflicts of interest and favourable recommendations in clinical guidelines, advisory committee reports, opinion pieces, and narrative reviews: systematic review. *BMJ*. 2020;371:m4234.
- [17] DeJong C, Aguilar T, Tseng C-W, et al. Pharmaceutical industry-sponsored meals and physician prescribing patterns for medicare beneficiaries. *JAMA Internal Med*. 2016;176:1114–22.
- [18] Goupil B, Balusson F, Naudet F, et al. Association between gifts from pharmaceutical companies to French general practitioners and their drug prescribing patterns in 2016: retrospective study using the French transparency in healthcare and national health data system databases. *BMJ*. 2019;367:l6015.
- [19] Levinsky NG. Nonfinancial conflicts of interest in research. *N Engl J Med*. 2002;347:759–61.
- [20] Institute of Medicine. Conflict of Interest in Medical Research, Education, and Practice. US: The National Academies Press. 2009:436.
- [21] Pham-Kanter G. Act II of the sunshine act. *PLoS Med*. 2014;11:e1001754.
- [22] Ozaki A, Murayama A, Saito H, et al. Transparency is not enough: how can we improve the management of financial conflicts of interest between pharma and healthcare sectors?. *Clin Pharmacol Ther*. 2021;110:289–91.
- [23] Fabbri A, Santos A, Mezinska S, et al. Sunshine policies and murky shadows in Europe: disclosure of pharmaceutical industry payments to health professionals in nine European countries. *Int J Health Policy Manag*. 2018;7:504–9.
- [24] Coombes R. Covid-19: SAGE members' interests published by government 10 months into pandemic. *BMJ*. 2020;371:m4911.
- [25] Joint Committee on Vaccination and Immunisation. The Joint Committee on Vaccination and Immunisation (JCVI) Advises UK Health Departments on Immunisation. Available at: <https://www.gov.uk/government/groups/joint-committee-on-vaccination-and-immunisation/conflict-of-interests>. [access date June 15, 2021].
- [26] Scottish Government. Scottish Government COVID-19 Advisory Group: Register of Members' Interests. Available at: <https://www.gov.scot/publications/scottish-government-covid-19-advisory-group-register-of-members-interests/>. [access date May 23, 2021].
- [27] COVID-19 Immunity Task Force. The COVID-19 Immunity Task Force's Management of Potential Conflict of Interest. Available at: <https://www.covid19immunitytaskforce.ca/managing-conflict-of-interest/#9dc1a18aa6919eae5>. [access date June 22, 2021].
- [28] Wallace M, Woodworth KR, Gargano JW, et al. The advisory committee on immunization practices' interim recommendation for use of Pfizer-BioNTech COVID-19 vaccine in adolescents aged 12-15 years - United States, may 2021. *MMWR Morb Mortal Wkly Rep*. 2021;70:749–52.
- [29] Oliver SE, Gargano JW, Marin M, et al. The advisory committee on immunization practices' interim recommendation for use of Pfizer-BioNTech COVID-19 vaccine - United States, december 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69:1922–4.
- [30] Morciano C, Basevi V, Faralli C, et al. Policies on conflicts of interest in health care guideline development: a cross-sectional analysis. *PLoS One*. 2016;11:e0166485.
- [31] Shimizu K, Wharton G, Sakamoto H, et al. Resurgence of covid-19 in Japan. *BMJ*. 2020;370:m3221.
- [32] Kakimoto K. A study of the transmission of novel coronavirus infections (reported between 17 February and 31 May 2020) with and without a known route of infection [In Japanese]. *Infect Agents Surveill Rep*. 2021;42:p82–4.
- [33] Yashio T, Murayama A, Kami M, et al. COVID-19 infection during the olympic and paralympic games Tokyo 2020. *Travel Med Infect Dis*. 2021;44:102205.
- [34] Lenzer J, Hoffman JR, Furberg CD, et al. Ensuring the integrity of clinical practice guidelines: a tool for protecting patients. *BMJ*. 2013;347:f5535.
- [35] Schunemann HJ, Al-Ansary LA, Forland F, et al. Guidelines international network: principles for disclosure of interests and management of conflicts in guidelines. *Ann Intern Med*. 2015;163:548–53.