

[Research Report]
**Survey of Japanese Physicians Regarding
Climate Change and Health
(December 3, 2023)**



Suggested Citation:

Health and Global Policy Institute (2023). Survey of Japanese Physicians Regarding Climate Change and Health.
<https://hgpi.org/en/research/cop28-survey.html>

Ahead of the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC), Health and Global Policy Institute (HGPI) and the SPRING GX project of the University of Tokyo conducted a survey among Japanese physicians to gather their opinions regarding climate change and health, sustainable healthcare systems, and climate change policy. The data were collected from November 21-27, 2023 and we received 1,100 responses from physicians practicing throughout Japan.

Key Findings

1. Physicians **do not have sufficient knowledge about climate change (36.1% got more than half of the question correct)**, the term **“planetary health” is not widely recognized (18.2%)**

2. Many physicians believe that climate change is affecting the health of the Japanese population and more specifically recognizing the impact on the health of the patients they see in their clinic
 - ✓ **78.1%** of physicians believe that climate change is **affecting the health of people in Japan**
 - ✓ **51.5%** of physicians believe that climate change is **impacting the health of patients in their field of practice**

3. **Around 70%** of physicians are **also aware of the health impacts caused by climate change** and believe that **over the next 10 years climate change will significantly adversely affect the following health issues**
 - ✓ Physical harm and/or injury from extreme weather events (e.g., flooding, typhoons, landslides, wildfires) **(83.3%)**
 - ✓ Heat-related illness **(79.5%)**
 - ✓ Arthropod-borne infections **(75.8%)**

4. There is **limited access to education** on climate change and health
 - ✓ Received education on "climate change and health" or “planetary health” **while in medical school (6.5%)**
 - ✓ Received **specialized training** on climate change and health **(11.6%)**

5. More than 70% of the **physicians would like to choose products, equipment, etc. that have lower environmental impacts and are more sustainable options**, if available

6. More than half of the physicians agree that they should **educate and advocate to their patients and their institution/facility**
 - ✓ Physicians should advise their patients on the links climate change has on their health **(56.7%)**
 - ✓ Physicians should advocate within their institution/facility for implementing mitigation measures for more environmentally sustainable healthcare **(57.5%)**

 7. More than half of the physicians reported that the main barriers that prevent them from taking more action include **lack of information and resources (54.4%), lack of knowledge (52.7%),** and **lack of time (51.7%)**
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Background

The effects of climate change are becoming increasingly apparent causing severe impact on ecosystems, human health, and society worldwide. The World Health Organization (WHO) named climate change as the single biggest health threat facing humanity [1]. There is a growing awareness among healthcare professionals of the health risks posed by climate change, especially physicians.

Japan has seen unexpectedly high occurrences of extreme weather events over the years such as heatwaves, flooding, and landslides due to climate change [2]. The number of deaths from heat stroke is 5.5 times higher than the number of deaths from natural disasters, with the majority being among people aged 65 and older [3,4]. Physicians play an important role in communicating information about the impacts of climate change and protecting the health of the people and the environment. Furthermore, healthcare systems are one of the major emitters of carbon dioxide and other environmental pollutants that adversely affect human health. The Japanese healthcare system accounts for 5% of the total domestic carbon footprint; thus, it is imperative to reduce carbon emissions from the medical sector and focus on creating more sustainable healthcare systems to meet the goal of carbon neutrality by 2050.

We conducted this survey to understand the knowledge and awareness of physicians in Japan regarding climate change and its impact on human health, their willingness to provide climate-specific advice to patients, and advocate on climate change policies. By understanding physicians' knowledge on climate change, we can improve the actions they can take to reduce the health impacts of climate change, and can provide support and information to help physicians engagement in building a sustainable healthcare system and improving climate policy reform.

Overview of Survey Respondents

In this survey, we collected responses from **1,100 physicians** (gender: 952 men, 133 women, 14 non-binary, 1 non-disclosed) active in clinical practice in Japan.



Respondent Characteristics (Gender, Age Group, Facility Category)

(Conducted November 2023 N=1,100)

Item	N	N = 1,100	%
Age	1,100		
20s		36	3.3%
30s		176	16.0%
40s		263	23.9%
50s		308	28.0%
60s		272	24.7%
70s		41	3.7%
80s		3	0.3%
90s		1	0.1%
Gender	1,100		
Male		952	86.5%
Non-binary		14	1.3%
Female		133	12.1%
Declined to Respond		1	0.1%
Facility Category	1,100		
Medical Clinic		385	35.0%
Hospitals (excluding hospitals affiliated with medical schools)		591	53.7%
Medical education institutions (universities with medical schools or their affiliated institutions)		111	10.1%
Health care facility for the elderly		9	0.8%
Nursing and medical care hospital		2	0.2%
Facilities other than the above		2	0.2%

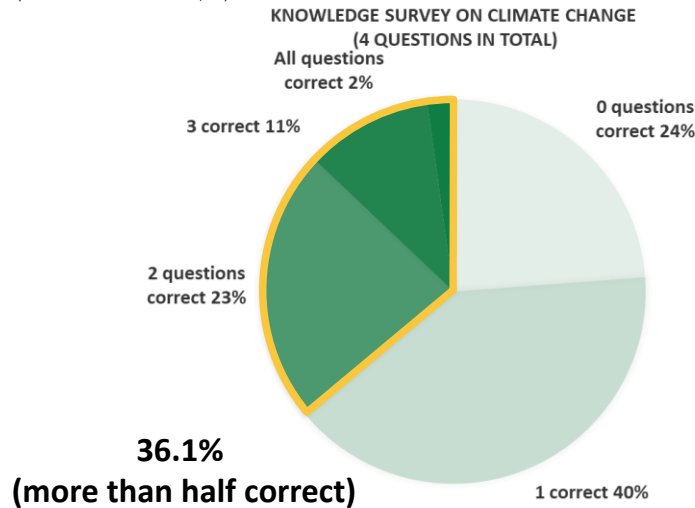
Results

■ Regarding knowledge of climate change, those who answered all questions correctly were only 2%, and those who answered more than two questions correctly were 36.1%, which indicated that **physicians do not have sufficient knowledge about climate change.** ¹



Many physicians do not have sufficient knowledge of Climate Change

(Conducted November 2023 N=1,100)



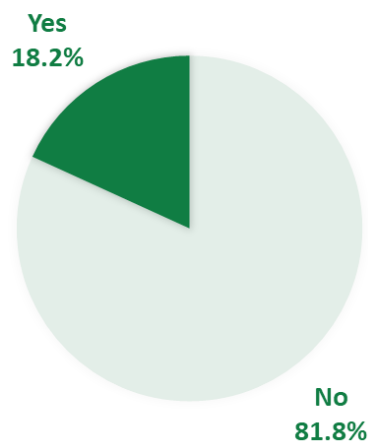
■ The term “planetary health” is not widely recognized (18.2%)



The term “Planetary Health” is not widely recognized

(Conducted November 2023 N=1,100)

ARE YOU FAMILIAR WITH THE TERM “PLANETARY HEALTH”?



¹ The questions asked in the survey were as follows:

1. How do you think climate change is mainly caused?
2. According to the Intergovernmental Panel on Climate Change (IPCC) Report (AR6), it finds that unless there are immediate and large-scale reductions in greenhouse gas emissions, averaged over the next 20 years, the global temperature is expected to reach or exceed how many degrees of warming?
3. According to the 2020 Health Impact Assessment Report for Japan, because of climate change, which health outcome was classified as high importance and urgency in Japan.
4. According to a policy paper by Health Care Without Harm, at what percentage is Japan’s healthcare sector’s climate footprint? (Source: Health Care’s Climate Footprint: How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action)

■ **Many physicians are aware of the health impacts of climate change.**

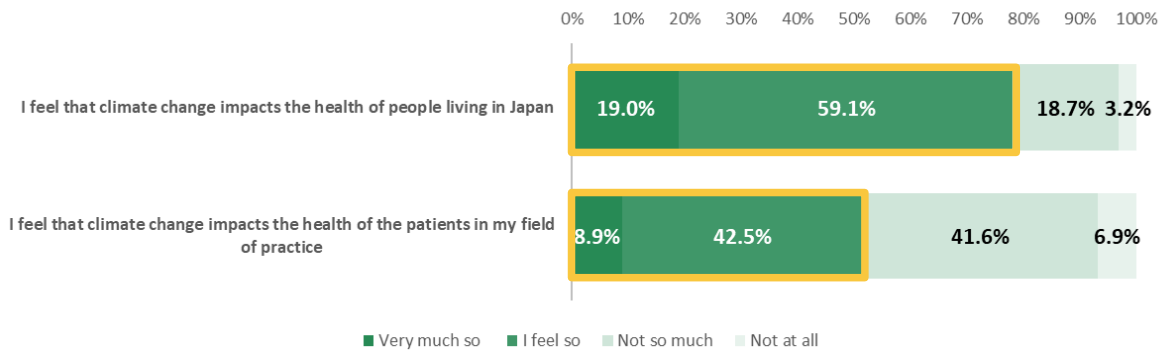
78.1% of physicians perceive that climate change is currently impacting the health of people in Japan with **51.4%** recognizing this impact among their patients.



The impact of climate change on health is recognized by many physicians

(Conducted November 2023 N=1,100)

PERCEPTION OF THE HEALTH IMPACTS OF CLIMATE CHANGE



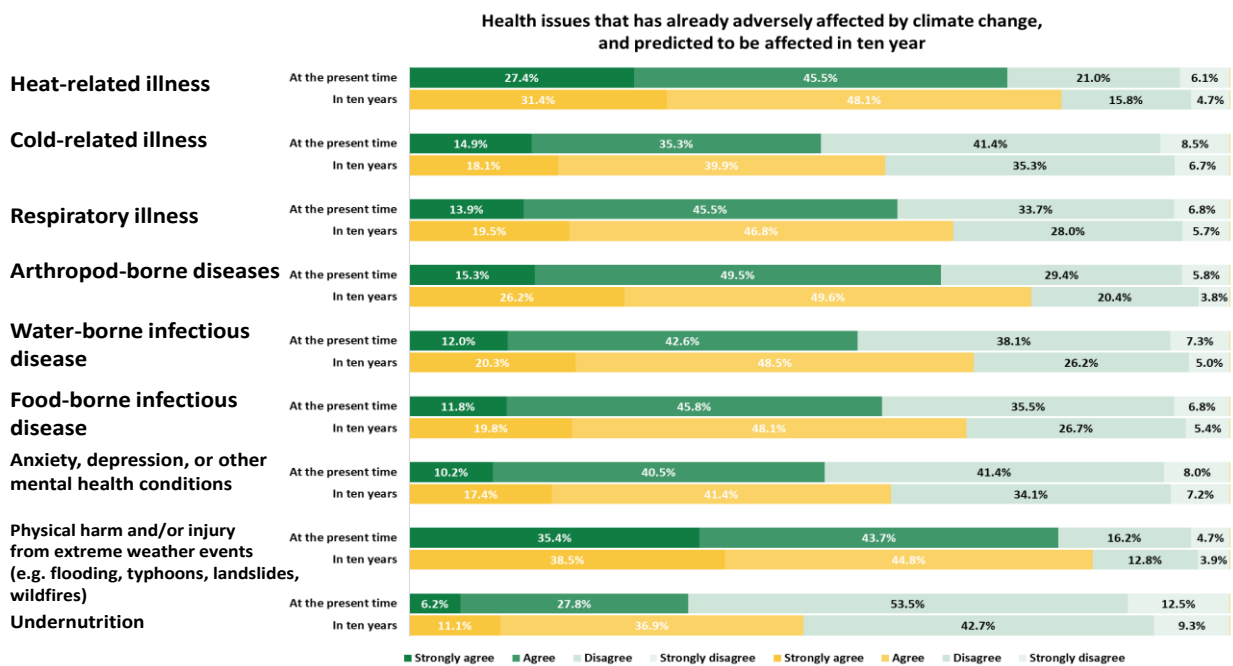
- **78.1%** of physicians perceive that climate change is currently impacting the health of people in Japan with **51.4%** recognizing this impact among their patients.

■ When asked the opinion of the physicians about how **currently climate change has already adversely affected** the following health issues, **compared with the affect over the next 10 years**, the responses were as follows.



Physicians opinions on the health impacts of climate change now and their predictions over the next 10 years

(Conducted November 2023 N=1,100)



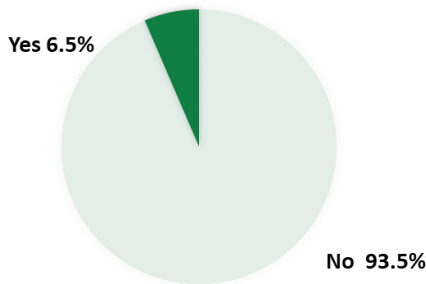
■ There is limited access to education on climate change and health



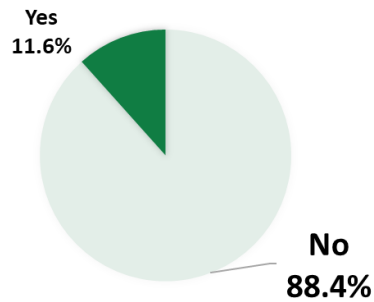
Limited opportunities to obtain education on Climate Change and Health

(Conducted November 2023 N=1,100)

ATTENDED COURSES DURING MEDICAL SCHOOL ON PLANETARY HEALTH AND OR CLIMATE CHANGE AND HEALTH



ATTENDED PROFESSIONAL DEVELOPMENT TRAINING ON PLANETARY HEALTH AND OR CLIMATE CHANGE AND HEALTH



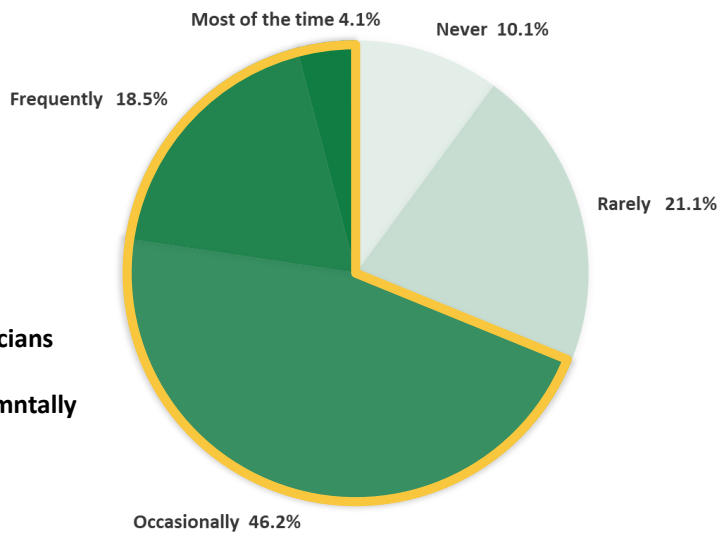
■ 68.8% of physicians want to choose products and equipment that have a lower environmental impact and are more sustainable.



Physicians willingness to choose products, equipment, etc. that have lower environmental impacts and are more sustainable

(Conducted November 2023 N=1,100)

WILLINGNESS TO CHOOSE MORE ENVIRONMENTALLY SUSTAINABLE OPTIONS, IF AVAILABLE



68.8% of physicians want more environmentally sustainable options

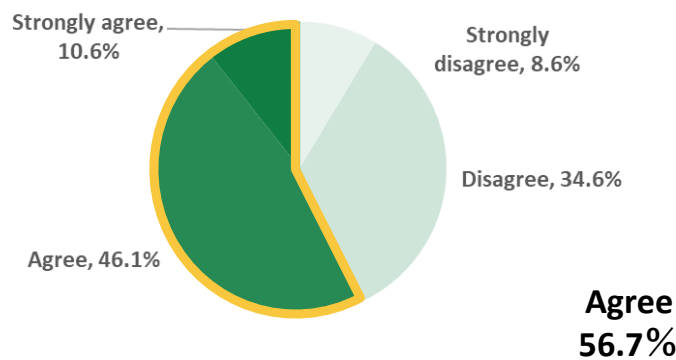
■ 56.7% of the physicians agree that they should advise their patients about the health impacts of climate change.



Physicians should advise their patients on the links climate change has on their health

(Conducted November 2023 N=1,100)

Physicians should advise their patients on the links climate change has on their health



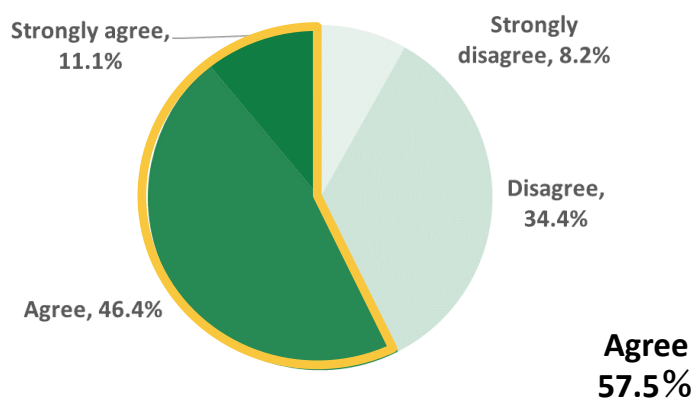
■ 57.5% of physicians agree they should advocate within their facility for to implement mitigation measures for more environmentally sustainable healthcare.



Physicians should advocate within their institution/facility for implementing mitigation measures for more environmentally sustainable healthcare

(Conducted November 2023 N=1,100)

Physicians should advocate within their institution/facility for implementing mitigation measures for more environmentally sustainable healthcare



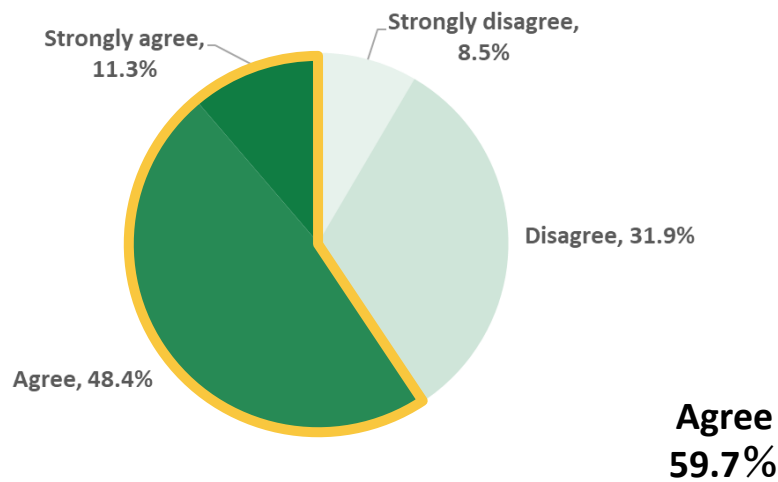
■ **59.6% of physicians agree that they can play a role in helping people change their behavior to choose more environmentally-friendly and sustainable lifestyles.**



Physicians believe they can play a role in helping people change their behaviors to choose environmentally friendly and sustainable lifestyle

(Conducted November 2023 N=1,100)

Physicians could play a role in changing the attitude and behaviors of their patients/the public regarding their willingness to engage in more environmentally sustainable lifestyle choices



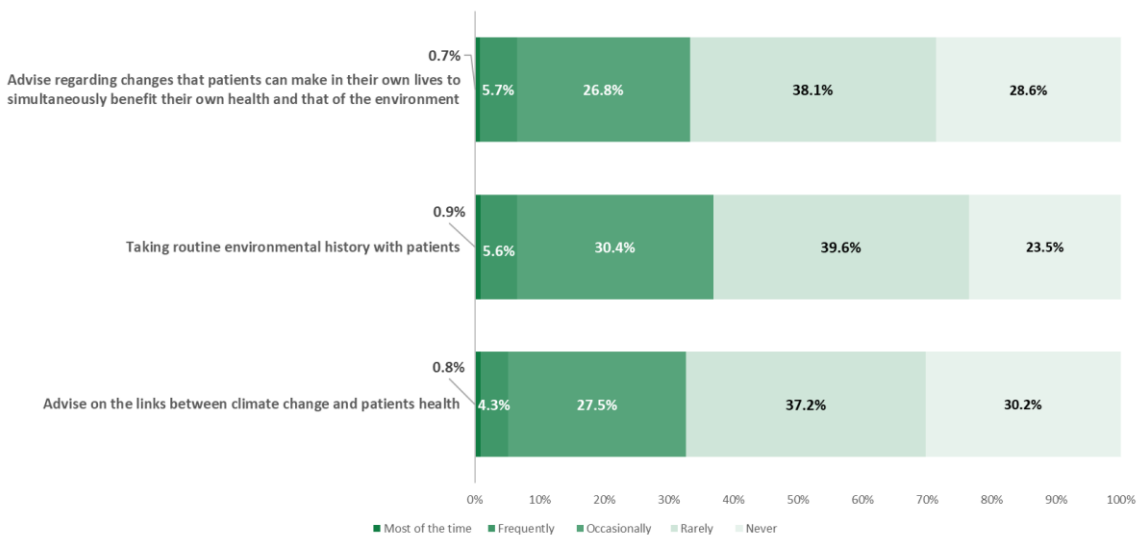
■ **Around 30% of physicians advise patients on the link between climate change and health.**



Physicians' practice in advising patients on the link between climate change and health

(Conducted November 2023 N=1,100)

MEDICAL PRACTICES THAT ARE MINDFUL OF THE LINK BETWEEN CLIMATE CHANGE AND HEALTH



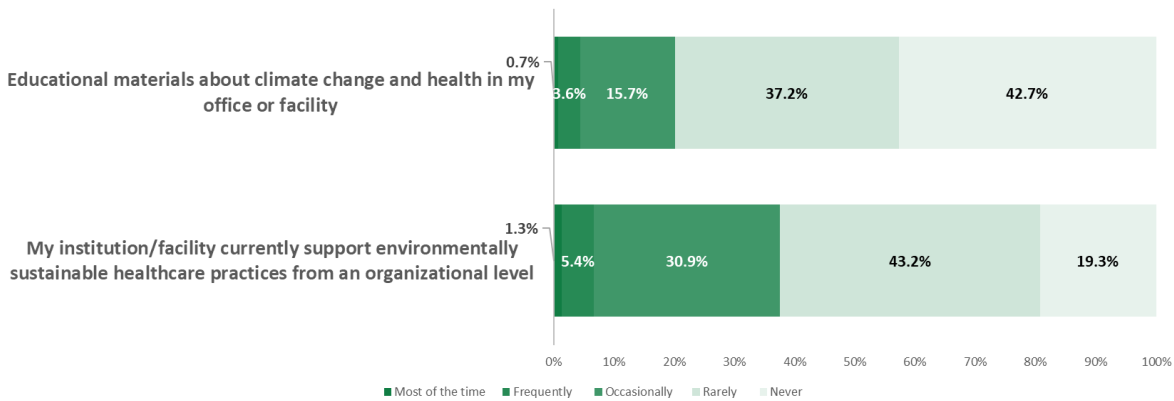
■ Only 37.6% of physicians' healthcare facilities make efforts to support and provide environmentally sustainable healthcare.



Medical institutions' efforts to provide environmentally sustainable healthcare is limited

(Conducted November 2023 N=1,100)

MEDICAL INSTITUTIONS' EFFORTS TO PROVIDE ENVIRONMENTALLY SUSTAINABLE MEDICAL CARE



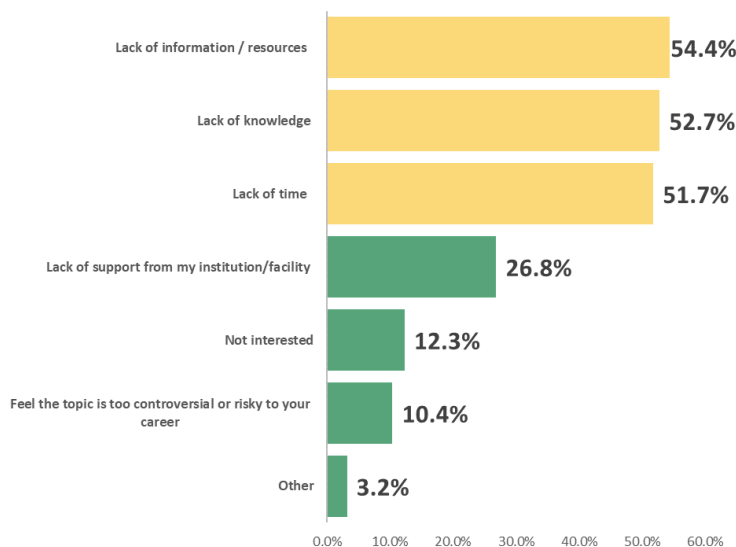
■ The main barriers that physicians face that reduce their willingness to raise awareness about climate change and health is due to lack of information and resources, lack of knowledge, and lack of time.



Lack of information, knowledge and time explains why raising awareness about climate change and health is challenging

(Conducted November 2023 N=1,100)

FACTORS THAT REDUCE PHYSICIANS WILLINGNESS TO ENGAGE IN ADVOCACIES AND ACTIVITIES RELATED "HEALTH AND CLIMATE CHANGE"



Discussion

Healthcare professionals around the world are becoming more aware of the impact climate change has on the health of humans. Consistent with previous research in other countries, physicians who participated in this research in Japan have a strong awareness that climate change is happening and an understanding of the adverse impact that climate change has on the health of the population.

More than half of the physicians agreed that they should educate their patients about the health impacts of climate change and raise more awareness within their facilities to promote mitigation measures for more environmentally sustainable healthcare. Moreover, close to 60% of physicians agreed they can play a role in changing the attitude and behavior of their patients and the public regarding their willingness to engage in more environmentally sustainable healthcare choices.

However, around 70% of those physicians currently hardly advise their patients on the links between climate change and health or on health “co-benefits”, and rarely advocate for more environmentally sustainable healthcare and practices within their facility. When asked about some of the factors that reduce their willingness to engage in climate change and health advice or advocacy, the main barriers for more than half of the physicians included lack of time, lack of resources, and lack of knowledge. Previous survey studies among physicians around the world found similar results, that majority of the respondents were aware of the health threat of climate change and willing to learn more and become more active in climate related initiatives, however, many mentioned a lack of time and knowledge [5,6,7].

Furthermore, based on the findings in this study, when we looked at education and training, the majority of the physicians reported not having any courses in medical school or any professional development training on climate change and health. Moreover, more than half rarely or never see educational materials (such as brochures, fact sheets, and posters) about climate change and health in their facility.

The data shows there is an interest from physicians to improve public and political awareness of climate change and health and could play a role in encouraging behavioral changes in their patients to choose more sustainable lifestyles, although very few physicians address climate change in their practices. Even when physicians recognize various health threats posed by climate change, they may not necessarily see that they can do anything about it. The support that takes climate change and health into consideration has not yet been implemented in clinical settings and there is also a need for more education, resources, and organizational support from the facilities where physicians work.

Recommendations

As the physicians predict that over the next 10 years, there will be an increase in the adverse health impact from heat-related diseases, arthropod-borne infections, and physical harm or injury caused by extreme weather events, it is imperative for physicians to be aware of the important role they can play in working with the public and their patients in mitigating and adapting to the environmental changes and the impact it has on their health. In order to serve an essential role, medical professionals are required to possess sufficient knowledge to take more responsibility for educating patients and the public.

2022 revisions in the Medical Education Model Core Curriculum added compulsory topics such as “climate change and medical care” for medical students, and it is expected that the increased knowledge of future physicians could lead to a more active role in educating their patients about climate risks and health co-benefits of climate actions. Continuing professional education courses could serve to bridge the knowledge gap of the physicians currently in clinical practice.

The healthcare sector remains as one of the major greenhouse gas (GHG) emitters and as healthcare workers with a responsibility for health, mitigating the consequences of climate change in the future is a duty, and need to significantly increase the capacity and will in reducing their GHG emissions.

Despite the small percentage of physicians (3.5%) who belong to professional societies that support work to educate or raise awareness of the risks of climate change and advocate for climate change policies, there are increasing opportunities for climate change and health to be taken up as themes in academic conferences. Professional societies can also provide physicians with resources and opportunities to advocate for changes to more environmentally sustainable practices within healthcare systems and encourage policymakers to strengthen their commitments to achieving the Paris Agreement targets of net zero GHG emissions by 2050.

Physicians counsel patients on a daily basis and have gained society's recognition and trust giving physicians a great amount of personal and political influence; as such, physicians should become more aware of their potential to use their societal influence to advocate for healthy lifestyles and healthy public policies.

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Data collection was managed through PLAMED Inc.

Ethics

Ethical approval for this research was obtained from the Research Ethics Committee of the University of Tokyo (Ethics Approval ID # 2023229NI).

Funding

This research was supported by Health and Global Policy Institute (HGPI) and SPRING GX project of the University of Tokyo (JST SPRING), Grant Number JPMJSP2108.

Conflict of Interest

The authors declare that they have no conflict of interest.

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