

[Survey Report]

Survey of Japanese Nursing Professionals Regarding Climate Change and Health

Survey Report

November 14, 2024



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Regarding Climate Change and Health.

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Ahead of the 29th Conference of the Parties (COP29) to the United Nations Framework Convention on Climate Change (UNFCCC), Health and Global Policy Institute (HGPI) and the Graduate School of Health Sciences of the Niigata University School of Health Sciences Faculty of Medicine conducted a self-administered online survey of nursing professionals in Japan to gather their opinions on climate change and health, sustainable healthcare systems, and climate change policy. It was conducted from August 28 to August 31, 2024 and received responses from 1,200 people serving as nursing professionals throughout Japan.

Key Survey Findings

[Awareness Toward Climate Change and Health]

- 1. Many nursing professionals (approx. 70%) were aware that climate change is occurring in every region of the world**
- 2. Almost all nursing professionals (93%) were aware that Japan is experiencing some forms of extreme weather, and some felt that extreme weather is life-threatening**
 - ✓ Among those who responded feeling changes in the frequency and intensity of weather events over the past two to three years, more than half also responded that they have experienced “High temperatures” (96.1%), “Heavy or torrential rains” (86.4%), “Typhoons or storm surges” (74.0%), “Flooding” (71.0%), or “Drought” (62.1%) that “feel abnormal compared to the past”.
 - ✓ In each item, the nursing professionals who responded “clearly abnormal compared to the past, and I feel a threat to life” were as follows: “High temperatures” (30.5%), “Heavy or torrential rains” (18.7%), “Typhoons or storm surges” (14.2%), “Flooding” (13.8%) and “Drought” (8.4%). For “High temperatures,” 7.8 times more respondents selected this response compared to those who responded, “no abnormality compared to the past” (3.9%).
- 3. Among respondents who recognized that extreme weather events are occurring, almost all (94%) responded that these events are caused by climate change**
- 4. Among respondents who recognized that extreme weather events are occurring, over three-quarters (75.3%) responded that “if no action is taken, extreme weather events will continue into the next generation”**

[Knowledge Concerning Climate Change]

- 5. Many nursing professionals do not possess accurate knowledge of climate change and its health impacts (respondents who knew all items shared in our survey: 42%*) and the term “planetary health” is not widely recognized (11.2%)**
 - ✓ When broken down by qualifications, midwives had the highest correct answer rate (58%) followed by public health nurses (50%), and nurses (40%).
- 6. Very few nursing professionals have opportunities to learn about the health impacts of climate change (13.5%)**
 - ✓ Among respondents who were knowledgeable about climate change and health, 33% of those with qualifications as midwives learned information from “Resources provided by academic societies and professional organizations (e.g., articles, scientific conferences, specialized websites).” This was a higher rate compared to those with qualifications in other areas (nurses: 12%, public health nurses: 11%).
 - ✓ Outside of formal education, other top sources of information included the mass media (73.8%), social media (34.5%), and other online media (15.3%).

[Professional Views on Climate Change]

- 7. Many nursing professionals (72%) view climate change as an important issue**
 - ✓ When asked why climate change is an important issue, the most common responses were, “strongly connected to life and the health sector,” “need to address the issue for future generations,” and “health sector also has a negative impact on the environment.”
 - ✓ The top obstacles to taking action on climate change were “I do not know specific methods of addressing the issue,” “there are other duties and issues that must be prioritized,” and “insufficient knowledge about the relationship between climate change and health.”
- 8. Most nursing professionals (80%) feel the need to learn about climate change and health**
 - ✓ The most common reasons for the need to learn about climate change and health, “because it is life-

threatening, and nursing professionals must know about it,” “nursing professionals should better understand the health sector’s negative environmental impacts,” and “nursing professionals must address the issue for patients and service users today, and for future generations.”

- ✓ Those serving in hospitals had the lowest response rate regarding the need to learn about climate change and health. By affiliated facility, response rates for those who feel the need to learn about climate change and health were: hospitals, 76%; clinics, 84%; in-home care facilities, 83%; long-term care welfare facilities, 83%; nursing educational institutions, 85%; government agencies, 89%; and other, 90%.
9. **Most nursing professionals (84%) indicated that they want to learn about climate change and health**
 - ✓ The topics that respondents said they wanted to learn about the most were “Health impacts and disease,” “Preparing for extreme weather disasters and other emergencies,” and “Specific methods of implementing climate-friendly practices in routine duties.”
 10. **While only one in five respondents (20%) knew the volume of greenhouse gas (GHG) emissions from the health sector, most nursing professionals (90%) considered GHG emissions to be a problem. More than half (58.4%) responded, “The continued growth of GHG emissions beyond current levels is concerning”**
 11. **Many nursing professionals think that if options for providing healthcare services that are less burdensome to the environment are available, these options should be actively adopted (78%), while around half of respondents (49.7%) said they do not know specific methods for doing so**
 12. **Initiatives that have been introduced at respondents’ affiliated facilities included waste management (63%), the use of digital technology (45%), energy management (22%), environmentally-friendly facility management (18%), the use of sustainable supply chains (16%), and initiatives for mobility and transportation (16%)**
 - ✓ The percentage of respondents that selected “I do not know” about initiatives at their affiliated facilities were 19% for waste management, 27% for the use of digital technology, 36% for energy management, 48% for environmentally-friendly facility management, 50% for the use of sustainable supply chains, and 45% for initiatives for mobility and transportation.
 - ✓ When broken down by position, a higher percentage of those in non-management positions responded “I do not know” compared to those in management positions (for more details, see survey findings.)
 - ✓ When asked about the objectives of such initiatives, respondents selected “To reduce costs” (78%), “To streamline operations” (48%), “To lessen our environmental impact” (35%), “Other” (0.3%), and “I do not know” (5%).
 13. **Approximately 50% of nursing professionals responded that they can play a role in educating patients and service users about the health impacts of climate change**
 14. **Many nursing professionals (approx. 70%) responded that when they are not at work, they provide information, consultation, or support regarding health or healthcare to family members, friends, neighbors, and others close to them**

Background

In addition to changes in the environment, it is becoming increasingly apparent that climate change is having a wide range of impacts on ecosystems, humanity, economies, and society. The World Health Organization (WHO) recognizes climate change as one of the greatest health threats to humanity, and estimates that the various direct and indirect impacts of climate change on human health will result in approximately 250,000 additional deaths per year between 2030 and 2050.¹

In Japan, climate change is causing extreme weather events like heat waves, floods, and landslides to become more severe every year.² Furthermore, heat stroke kills 5.5 times more people in Japan than natural disasters, with the majority of those impacted being senior citizens who are 65 years of age and older.^{3, 4}

Nursing professionals are specialists in healthcare, and as a group, nursing roles represent the most common professions in the health sector. Given their significance, the importance of nursing professionals in addressing climate change has been continuously advocated around the world for over a decade. In 2018, the International Council of Nurses (ICN) presented a statement titled, “Nurses, Climate Change and Health” which states, “Leadership from nurses to take immediate action to build climate resilient health systems is necessary.”⁵ Later, the elements of the ICN Code of Ethics for Nurses presented in 2021 state, “Nurses ... are aware of the health consequences of environmental degradation, e.g. climate change. They advocate for initiatives that reduce environmentally harmful practices to promote health and well-being.”⁶ In its capacity as a member of the ICN, the Japanese Nursing Association endorses these initiatives. Additionally, healthcare systems are major emitters of carbon and other pollutants that adversely impact human health. As such, to achieve carbon neutrality by 2050 and protect human health from the adverse impacts of climate change, it will be essential to focus on reducing health sector carbon emissions and building more sustainable healthcare systems.

This survey was conducted to determine knowledge levels and awareness regarding climate change impacts on human health among nursing professionals in Japan as well as to grasp their professional views and willingness to take action. Through this survey, we hope to acquire insights as to actions that nursing professionals in Japan should take in the future to reduce the human health impacts of climate change, to obtain suggestions regarding items like the feasibility of engaging nursing professionals in building a sustainable healthcare system, to improve climate policies, and to identify challenges that may be encountered when doing so.

¹ World Health Organization. Climate Change and Health. 2021. [Internet] Available from: <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health> [Accessed 28 October 2024]

² Wang SSY, Kim H, Coumou D, et al. Consecutive extreme flooding and heat wave in Japan: Are they becoming a norm? *Atmos Sci Lett* 2019; 20: e933. doi: 10.1002/asl.933

³ Baxter L, McGowan CR, Smiley S, Palacios L, Devine C, Casademont C. The relationship between climate change, health, and the humanitarian response. *Lancet*. 2022 Nov 5;400(10363):1561-1563. doi: 10.1016/S0140-6736(22)01991-2

⁴ Ortiz-Bobea, A, Ault, TR., Carrillo, CM, et al. Anthropogenic climate change has slowed global agricultural productivity growth. *Nat. Clim. Chang.* 11, 306–312 (2021). <https://doi.org/10.1038/s41558-021-01000-1>

⁵ International Council of Nurses. 2019. International Council of Nurses Position Statement: Nurses, Climate Change, and Health. <https://www.nurse.or.jp/nursing/international/icn/document/policy/pdf/shakai-20.pdf>

⁶ International Council of Nurses. The ICN Code of Ethics for Nurses revised 2021. p18-19. https://www.icn.ch/sites/default/files/inline-files/ICN_Code-of-Ethics_EN_Web.pdf

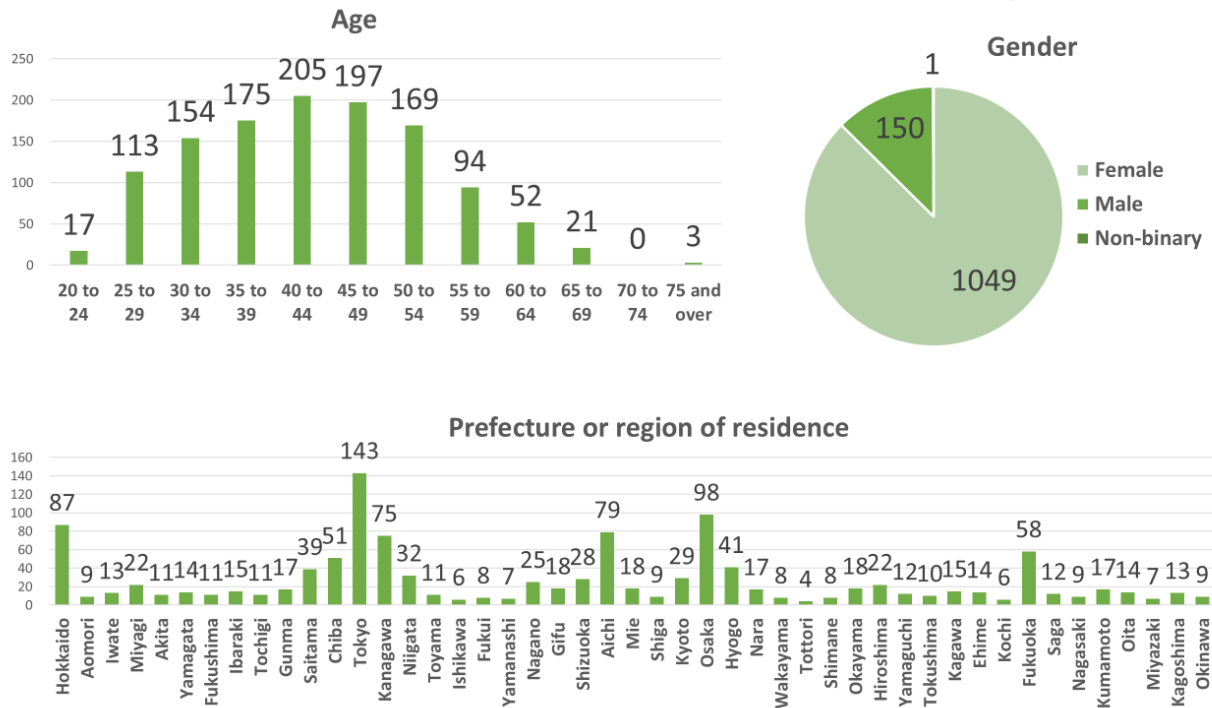
Overview of Survey Respondents

This survey received responses from 1,200 nursing professionals currently serving in nursing positions from across Japan.



Respondent Attributes (Gender, Age, Residence)

(Conducted August 2024. N=1,200)

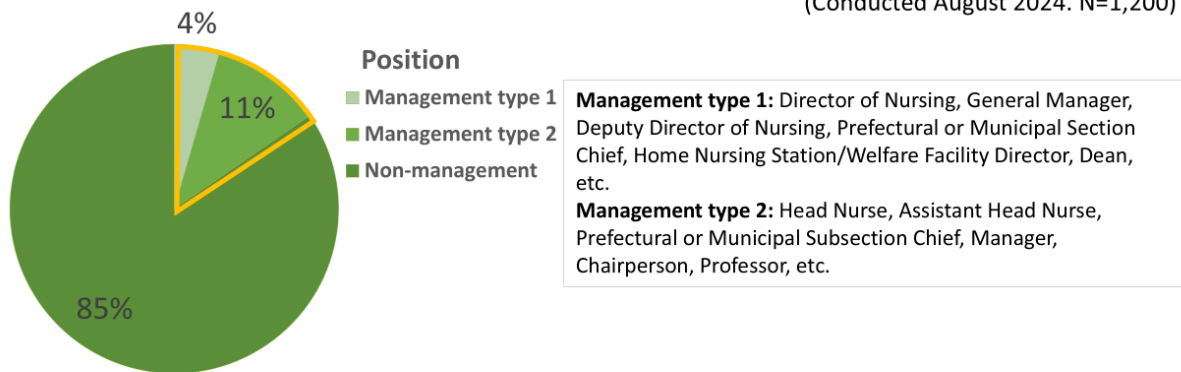


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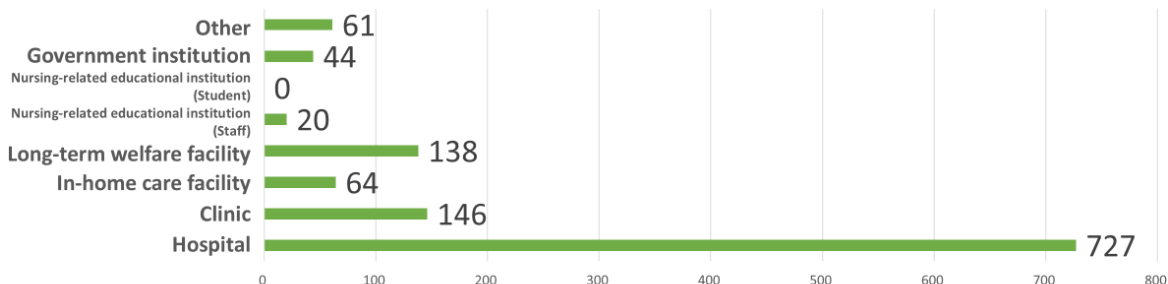


Respondent Attributes (Position, Affiliated facility)

(Conducted August 2024. N=1,200)



Main types of affiliated facilities

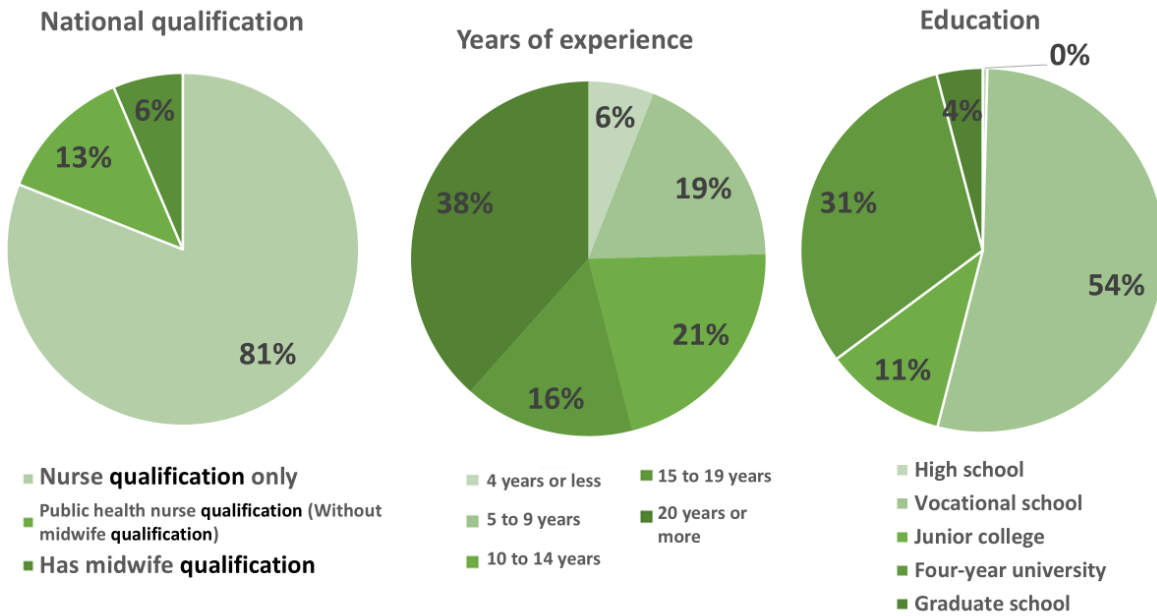


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Respondent Attributes (Certification, Work History, Educational Background)

(Conducted August 2024. N=1,200)



Findings

[Awareness Toward Climate Change and Health]

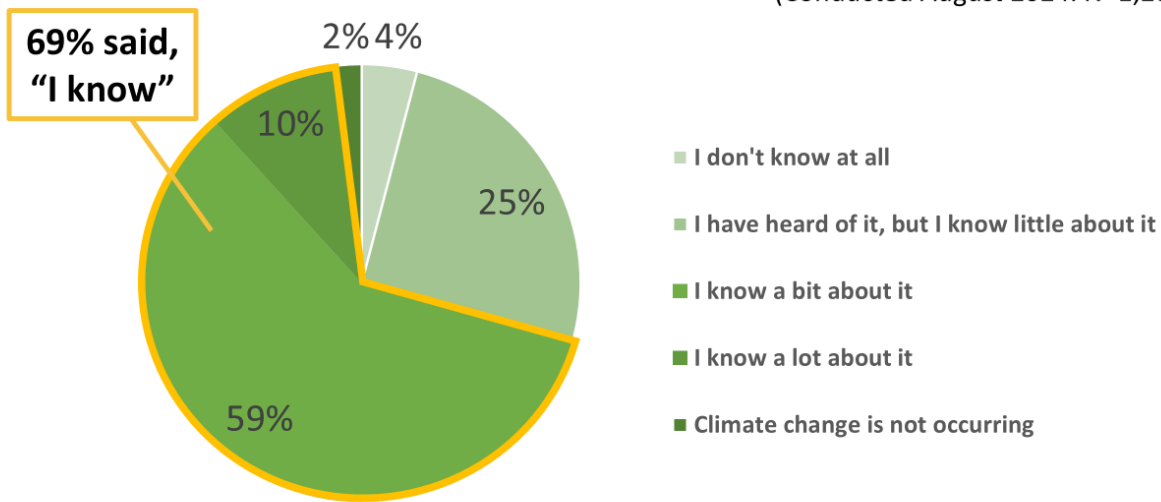
1. Many nursing professionals (approx. 70%) were aware that climate change is occurring in every region of the world



Please read the following. Did you know that climate change is occurring in every region around the world?

In recent years, continued global warming has led to an increase in extremely hot days and more frequent extreme weather events (such as torrential rains) in all regions of the world, and is having various impacts on people’s lives. Such changes in temperature, rainfall, and other weather patterns over long periods lasting several decades is called “climate change.”

(Conducted August 2024. N=1,200)



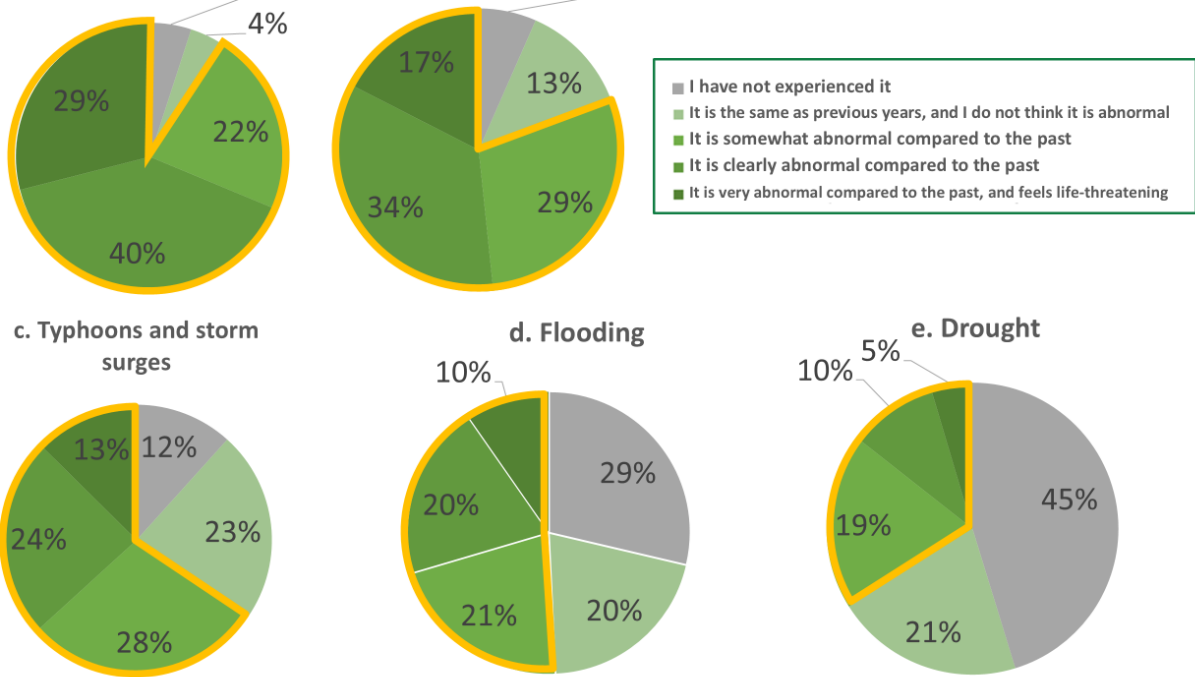
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2. Almost all nursing professionals (93%) were aware that Japan is experiencing some forms of extreme weather, and some felt that extreme weather is life-threatening
 - ✓ Among respondents who felt changes in the frequency and intensity of weather events in the past two to three years and said “The weather feels abnormal compared to the past,” the majority selected “High temperatures” (96.1%), “Heavy or torrential rains” (86.4%), “Typhoons or storm surges” (74.0%), “Flooding” (71.0%), or “Drought” (62.1%).
 - ✓ In each item, the nursing professionals who responded “clearly abnormal compared to the past, and I feel a threat to life” were as follows: “High temperatures” (30.5%), “Heavy or torrential rains” (18.7%), “Typhoons or storm surges” (14.2%), “Flooding” (13.8%) and “Drought” (8.4%). For “High temperatures,” 7.8 times more respondents selected this response compared to those who responded, “no abnormality compared to the past” (3.9%).



What is your experience of the frequency and intensity of the following weather events (a through e) in the area where you live over the past two to three years?

a. High temperatures 5% b. Heavy/torrential rain 7% (Conducted August 2024. N=1,200)



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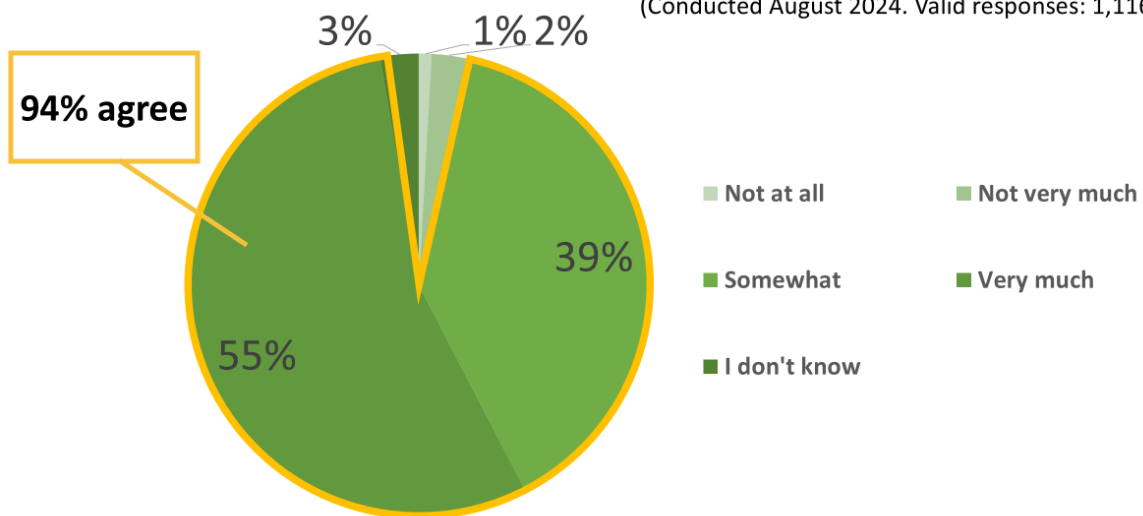
3. Among respondents who recognized that extreme weather events are occurring, almost all (94%) responded that these events are caused by climate change



Do you think climate change is causing the changes in frequency and intensity of the weather events that you are experiencing?

For those who responded, "It is somewhat abnormal compared to the past," "It is clearly abnormal compared to the past," or "It is very abnormal compared to the past, and feels life-threatening" regarding weather phenomena in the area where you live, please select one of the following options.

(Conducted August 2024. Valid responses: 1,116)



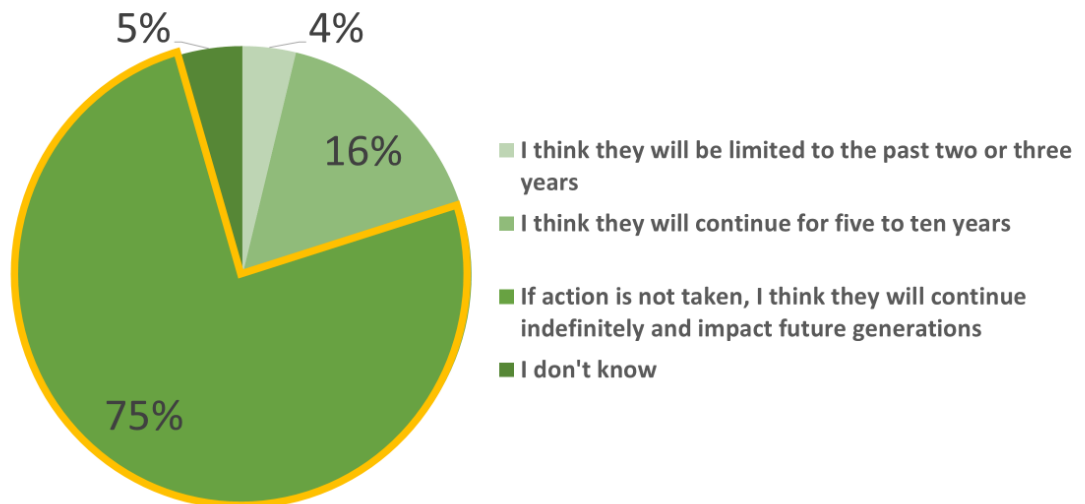
4. Among respondents who recognized that extreme weather events are occurring, over three-quarters (75.3%) responded that “if no action is taken, extreme weather events will continue into the next generation”



Do you think the changes in the frequency or intensity of the weather events that you are experiencing will continue in the future?

For those who responded, “It is somewhat abnormal compared to the past,” “It is clearly abnormal compared to the past,” or “It is very abnormal compared to the past, and feels life-threatening” for weather phenomena in the area where you live, please select one of the following options.

(Conducted August 2024. Valid responses: 1,116)



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[Knowledge Concerning Climate Change]

5. Many nursing professionals do not possess accurate knowledge of climate change and its health impacts (respondents who knew all items shared in our survey: 42%*) and the term “planetary health” is not widely recognized (11%)

*Includes respondents who said they are “Somewhat familiar” or “Very familiar” with all three items (a through c) below

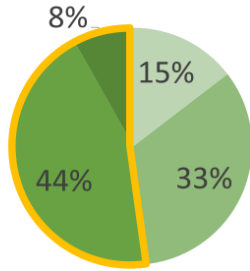
- Climate change is caused by global warming, which is mainly driven by human activities that increase greenhouse gasses (GHGs) in the atmosphere.
- Climate change can increase the likelihood of adverse human health effects. (In addition to heat stroke, it can worsen respiratory diseases such as asthma or chronic obstructive pulmonary disease (COPD) due to air pollution, alter the timing of infectious disease outbreaks, cause mental illnesses, or result in undernourishment due to food supply crises.)
- Adverse health impacts due to climate change will be more felt by children, senior citizens, and other vulnerable groups (such as people living in poverty, people living with disabilities and diseases, and women).



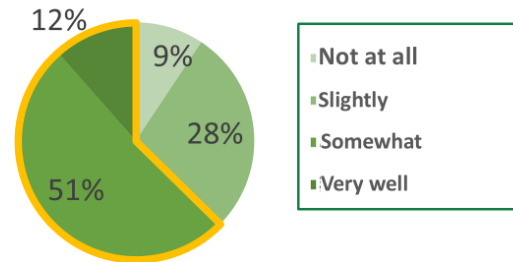
Please answer truthfully how familiar you are with the items shared below.
(Conducted August 2024. N=1,200)

The following statements on climate change and health are from various specialist organizations such as the Intergovernmental Panel on Climate Change (IPCC), the United Nations (UN), the World Health Organization (WHO), and the Ministry of the Environment, Government of Japan.

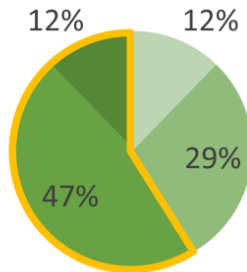
a. Climate change is caused by global warming, which is mainly driven by human activities that increase greenhouse gasses (GHGs) in the atmosphere.



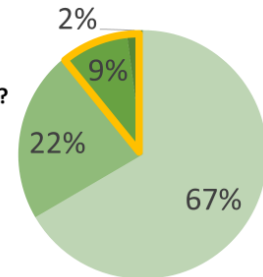
b. Climate change can increase the likelihood of adverse human health effects. (In addition to heat stroke, it can worsen respiratory diseases such as asthma or chronic obstructive pulmonary disease (COPD) due to air pollution, alter the timing of infectious disease outbreaks, cause mental illnesses, or result in undernourishment due to food supply crises.)



c. Adverse health impacts due to climate change will be more felt by children, senior citizens, and other vulnerable groups (such as people living in poverty, people living with disabilities and diseases, and women).



d. Are you familiar with the concept of planetary health?

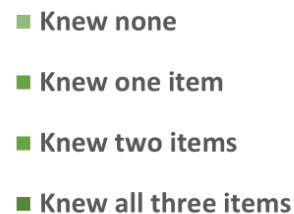
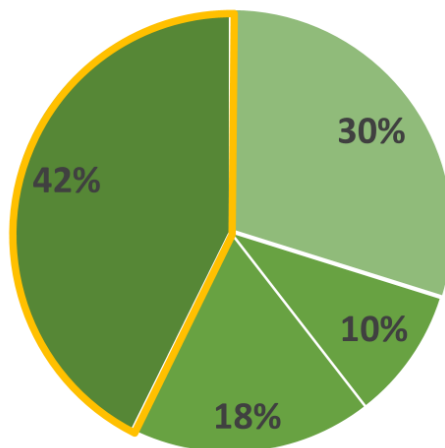


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Please answer truthfully how familiar you are with the items shared below.
(Conducted August 2024. N=1,200)

Respondents who knew about all items (a though c)



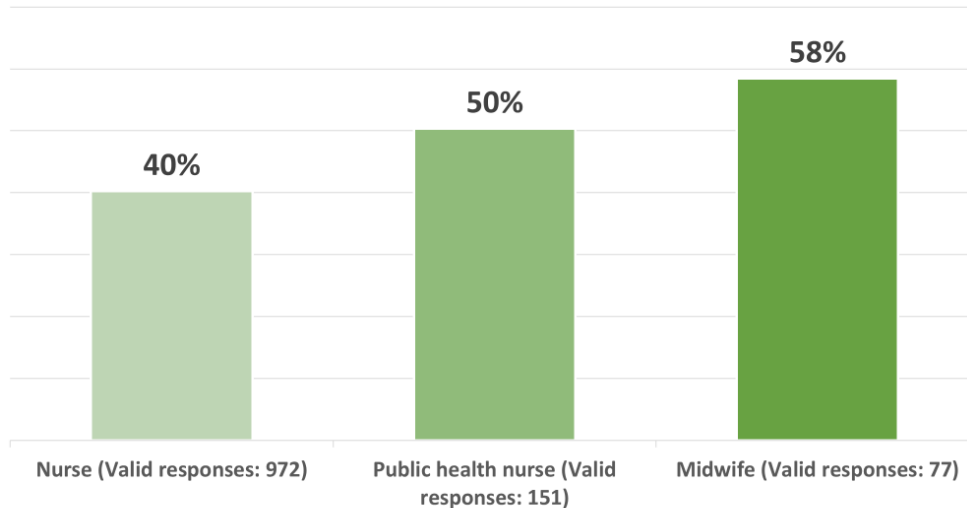
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- ✓ The highest percentage of respondents who knew all four items were midwives. When broken down by qualifications, midwives had the highest correct answer rate (58%) followed by public health nurses (50%), and nurses (40%).



Please answer truthfully how familiar you are with the items shared below. (By qualification)

(Conducted August 2024. N=1,200)



6. Nursing professionals have limited opportunities to learn about climate change and its health impacts

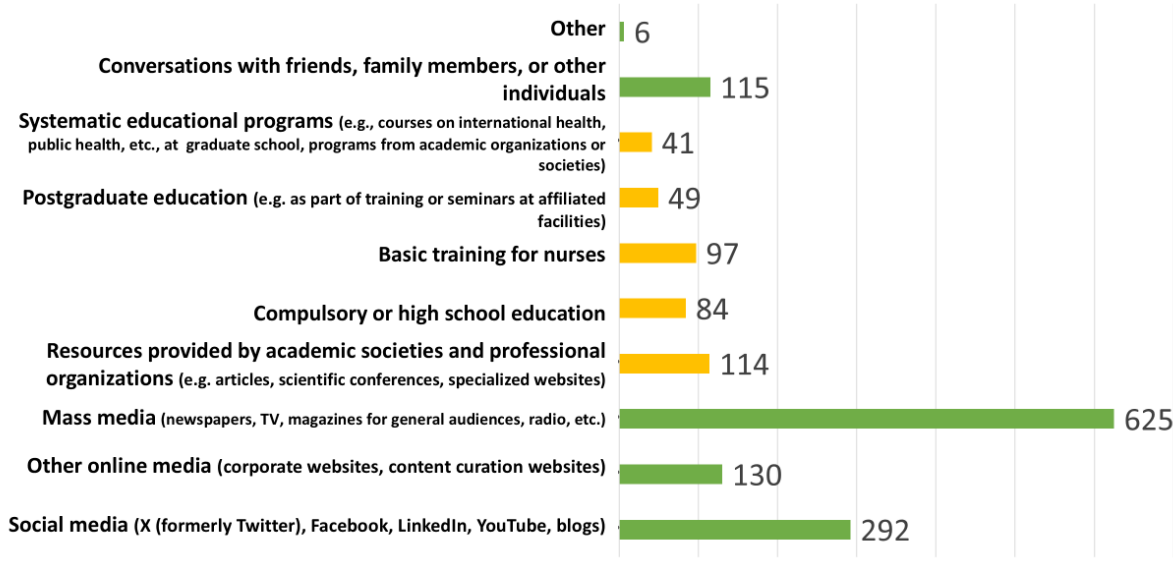
- ✓ The percentage of all nursing professionals that had opportunities to learn about the health impacts of climate change was limited (**13.5%**). Those opportunities are described below.
 - Resources provided by academic societies and professional organizations (e.g. articles, scientific conferences, specialized websites) **13.5%**
 - Compulsory or high school education **9.9%**
 - Basic training for nurses **11.5%**
 - Postgraduate education (e.g. as part of training or seminars at affiliated facilities) **5.8%**
 - Systematic educational programs (e.g., courses on international health, public health, etc., at graduate school, programs from academic organizations or societies) **4.8%**
- ✓ Other sources of information included the following.
 - Social media (X (formerly Twitter), Facebook, LinkedIn, YouTube, blogs, etc.) **34.5%**
 - Other online media (corporate websites, content curation websites, etc.) **15.3%**
 - Mass media (newspapers, TV, magazines for general audiences, radio, etc.) **73.8%**
 - Conversations with friends, family members, or other individuals **13.6%**



Where did you learn what you know about climate change and health?

For those who selected “somewhat ” or “very well” regarding the aforementioned information on climate change and health, please select all information sources that apply.

(Conducted August 2024. Valid responses: 847, multiple responses allowed)



- ✓ Among respondents who were knowledgeable about climate change and health, 33% of those with qualifications as midwives learned information from “Resources provided by academic societies and professional organizations (e.g., articles, scientific conferences, specialized websites).” This was a higher rate compared to those with qualifications in other areas (nurses: 12%, public health nurses: 11%).

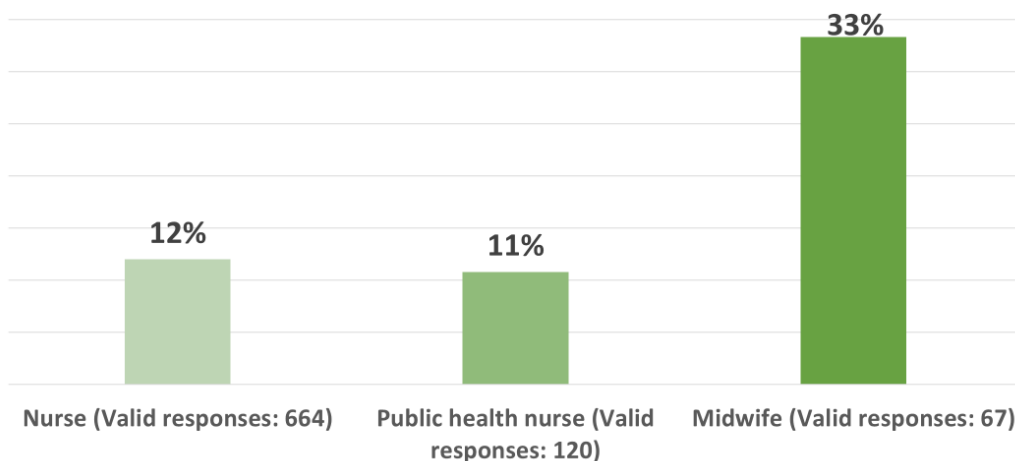


Where did you learn what you know about climate change and health?

For those who selected “somewhat” or “very well” regarding the aforementioned information on climate change and health, please select all information sources that apply.

Resources provided by academic societies and professional organizations (e.g. articles, scientific conferences, specialized website) (By qualification)

(Conducted August 2024. Valid responses: 847, multiple responses allowed)



[Professional Views on Climate Change]

7. Many nursing professionals (72%) view climate change as an important issue



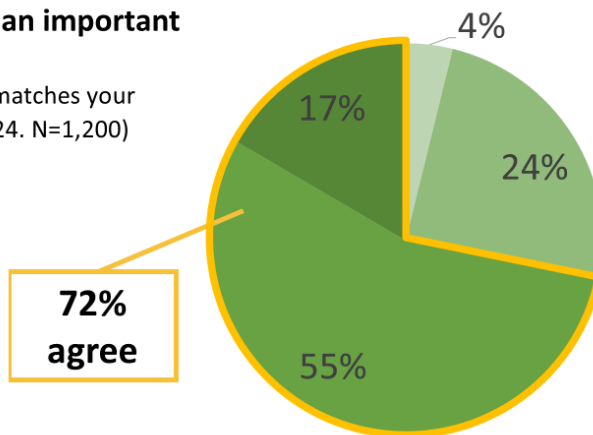
After reading the following statement, please share the degree to which you agree from the perspective of your profession (public health nurse, midwife, or nurse.)

The World Health Organization (WHO) speculates that the various direct and indirect impacts of climate change on human health will result in approximately 250,000 additional deaths per year between 2030 and 2050. Furthermore, in 2018, the International Council of Nurses (ICN) presented a statement titled, “Nurses, Climate Change and Health” which states, “The nursing profession has a duty to contribute to climate change adaptation (reducing vulnerability to the harmful effects) and mitigation (reducing or preventing greenhouse gas (GHG) emissions) as it is committed to protecting health and wellbeing and to promoting social justice.”

a . Do you think climate change is an important issue for nursing professionals?

Please select the answer that most closely matches your current awareness. (Conducted August 2024. N=1,200)

- Disagree
- Somewhat disagree
- Somewhat agree
- Agree

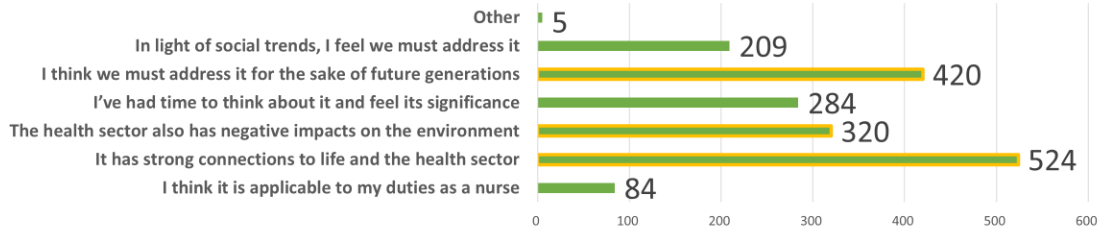


- ✓ The most common reasons that respondents thought climate change is an important issue included, “It has strong connections to life and the health sector,” “I think we must address it for future generations,” and “The health sector is also having negative impacts on the environment.”
- ✓ The most common obstacles to efforts for climate change were “I do not know specific methods of addressing the issue,” “There are other duties and issues that must be prioritized,” and “Insufficient knowledge about the links between climate change and health.”

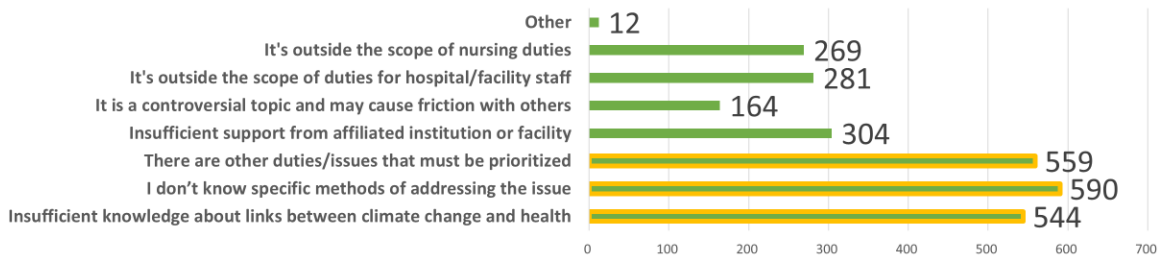


After reading the following statement, please share the degree to which you agree from the perspective of your profession (public health nurse, midwife, or nurse).

a-1. For those who selected “Somewhat agree” or “Agree,” what are the main reasons you think so? (Conducted August 2024. Valid responses: 862)



a-2. Do you think there any obstacles that hinder nursing professionals when attempting to take action for the issue of climate change? (Conducted August 2024. N=1,200)

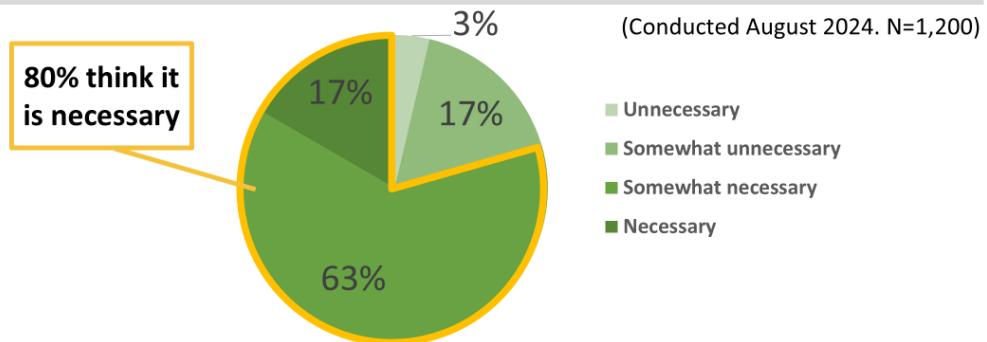


8. Most nursing professionals (80%) feel the need to learn about climate change and health

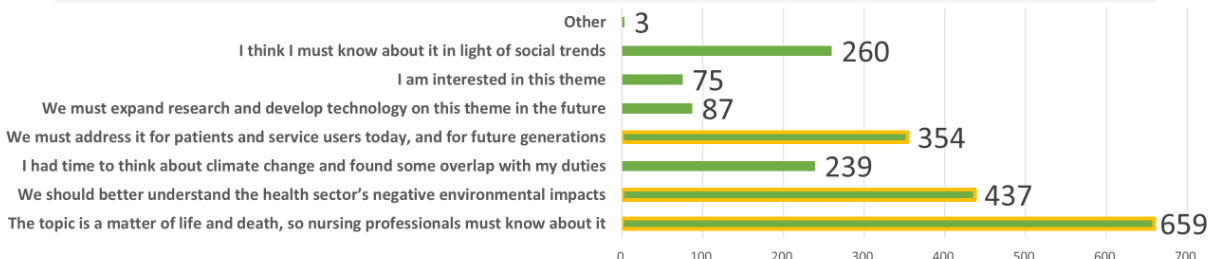
- ✓ Regarding the reasons for the need for nursing professionals to learn about climate change and health, the most common reasons for the need to learn about climate change and health, “because it is life-threatening, and nursing professionals must know about it,” “nursing professionals should better understand the health sector’s negative environmental impacts,” and “nursing professionals must address the issue for patients and service users today, and for future generations.”



Do you think it is necessary for nursing professionals to learn about climate change and health?



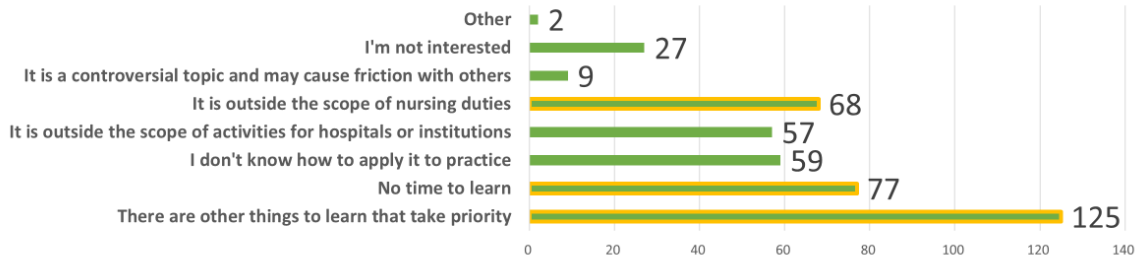
For those who selected “Somewhat necessary” or “Necessary,” what are the main reasons you think so? (Conducted August 2024. Valid responses: 954)





Do you think it is necessary for nursing professionals to learn about climate change and health?

For those who selected **“Somewhat unnecessary”** or **“Unnecessary,”** what are the main reasons you think so? (Conducted August 2024. Valid responses: 246)



- ✓ Those serving in hospitals had the lowest response rate regarding the need to learn about climate change and health. By affiliated facility, response rates for those who feel the need to learn about climate change and health were: hospitals, 76%; clinics, 84%; in-home care facilities, 83%; long-term care welfare facilities, 83%; nursing educational institutions, 85%; government agencies, 89%; and other, 90%.



Professional views on climate change and health impacts (By affiliated facility)

(Conducted August 2024. N=1,200)

Do you think it is necessary for nursing professionals to learn about climate change and health?



9. Most nursing professionals (84%) indicated that they want to learn about climate change and health

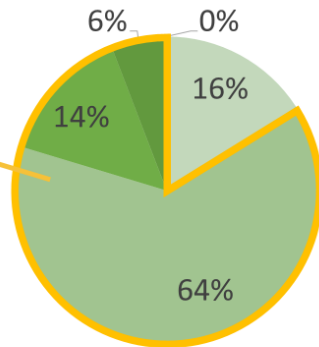
- ✓ The topics that respondents said they wanted to learn about the most included “Health impacts and disease,” “Preparations to make for extreme weather disasters and other emergencies,” and “Specific methods of implementing climate-friendly practices in routine duties.”



How much do you want to learn about climate change and health?

(Conducted August 2024. N=1,200)

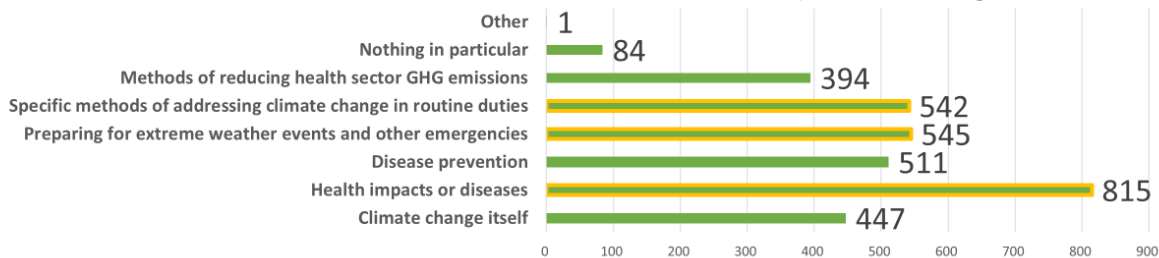
84% want to learn



- Currently, I do not think I need to learn about it
- Given the opportunity, I'd like to learn about it
- I am thinking of studying it on my own in the future
- I already know about it somewhat, and in the future I'd like to continue learning more about it

What would you like to know about climate change and health? (Multiple responses allowed)

(Conducted August 2024. N=1,200)



10. While only one in five respondents (20%) knew about the volume of greenhouse gas (GHG) emissions from the health sector, most nursing professionals (90%) considered GHG emissions to be a problem. More than half (58.4%) responded, "The continued growth of GHG emissions beyond current levels is concerning."



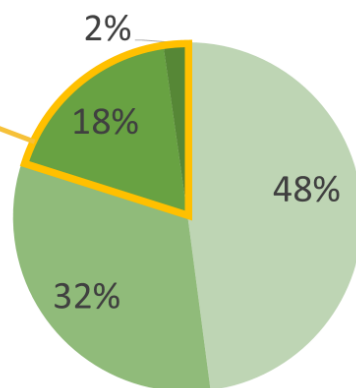
Did you know that the health sector accounts for 6.4% of Japan's total annual GHG emissions (approx. 70 million t-CO₂)?

Please share how familiar you are with the information provided below.

(Conducted August 2024. N=1,200)

It was reported that the volume of medical waste increased to approx. 2 to 3 times normal levels during the COVID-19 pandemic. Including the consumption of such medical supplies, total health sector GHG emissions amounted to 6.4% of the national annual total (approx. 70 million t-CO₂). This is greater than annual GHG emissions for Tokyo (approx. 60 million t-CO₂). It is reported that in the future, GHG emissions will continue to be high due to increased healthcare demand and growing disease and treatment complexity.

20% knew



- I didn't know at all
- I've heard it before, but I don't know much about it
- I knew about it somewhat
- I knew it extremely well

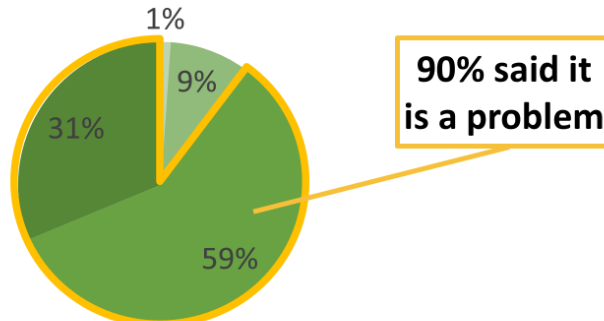


Regarding the adverse climate impacts of health sector GHG emissions

A. How do you feel about the issue?

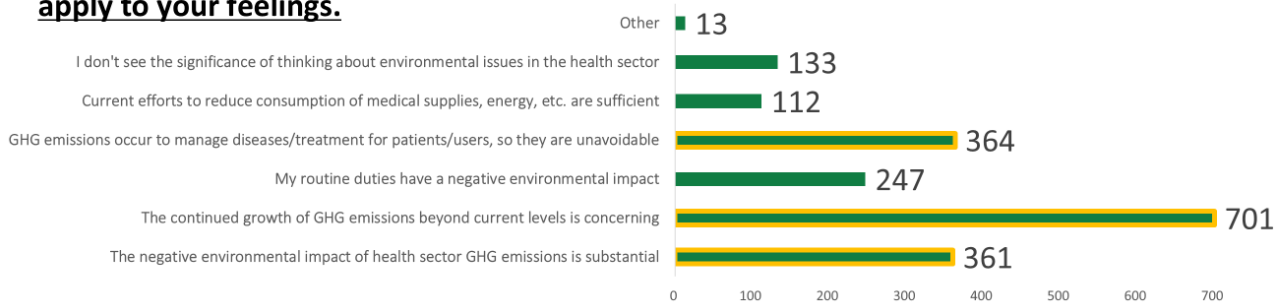
(Conducted August 2024. N=1,200)

- It is not a problem at all
- It is not much of a problem
- It is somewhat of a problem
- It is a major problem



B. Please select all statements that apply to your feelings.

(Conducted August 2024. N=1,200. Multiple responses allowed)

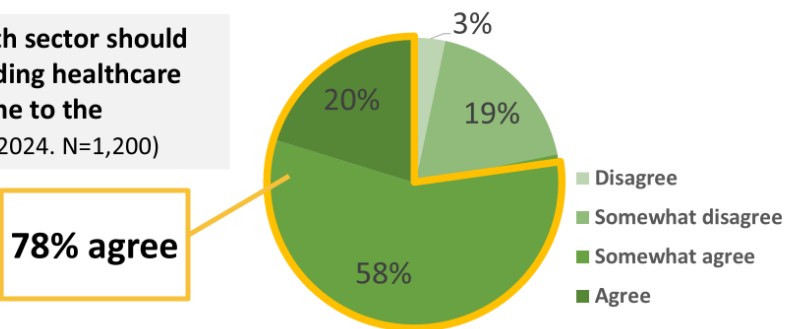


11. Many nursing professionals think that if options for providing healthcare services that are less burdensome to the environment are available, these options should be actively adopted (78%), while around half of respondents (49.7%) said they do not know specific methods for doing so.

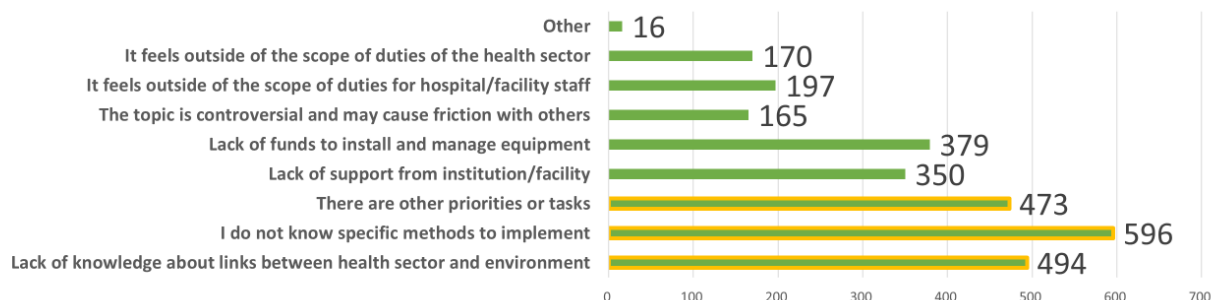


In your professional opinion (as a public health nurse, midwife, or nurse), how much do you agree with the following statement?

When available, the entire health sector should actively adopt options for providing healthcare services that are less burdensome to the environment. (Conducted August 2024. N=1,200)



Which factors do you view as obstacles to such efforts? (Conducted August 2024. N=1,200)



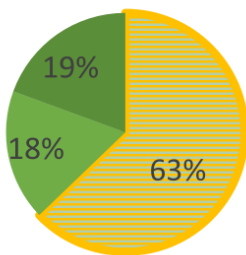
12. Initiatives that have been introduced at respondents' affiliated facilities included waste management (63%), the use of digital technology (45%), energy management (22%), environmentally-friendly facility management (18%), the use of sustainable supply chains (16%), and initiatives for mobility and transportation (16%).

- ✓ The percentage of respondents that responded "I do not know" about initiatives at their affiliated facilities were 19% for waste management, 27% for the use of digital technology, 36% for energy management, 48% for environmentally-friendly facility management, 50% for the use of sustainable supply chains, and 45% for initiatives for mobility and transportation.
- ✓ When broken down by position, a higher percentage of those in non-management positions responded "I do not know" compared to those in management positions (for more details, see survey findings.)
- ✓ When asked about the objectives of such initiatives, respondents selected "To reduce costs" (78%), "To streamline operations" (48%), "To lessen our environmental impact" (35%), "Other" (0.3%), and "I do not know" (5%).

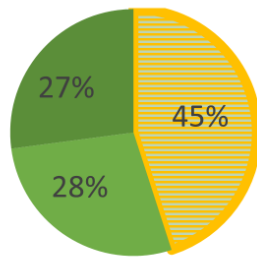


Are the following initiatives currently being implemented at the organizational level in your institution or facility? (Conducted August 2024. N=1,200) ■ Yes ■ No ■ I don't know

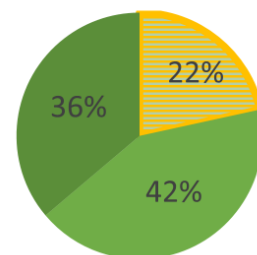
1. Waste management
(e.g. proper garbage separation, recycling, introducing waste reduction measures)



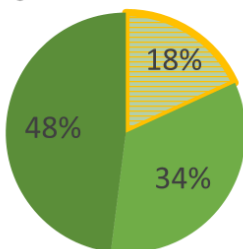
2. Use of digital technology
(e.g. actively adopting electronic terminals to reduce paper usage, encouraging telemedicine)



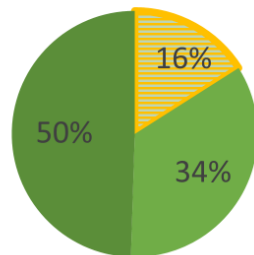
3. Energy management
(e.g. facility-wide electricity reduction, use of renewable energy such as solar, use of energy-efficient equipment)



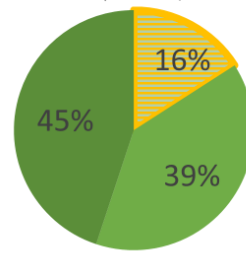
4. Environmentally-friendly facility management
(e.g. use of environmentally-friendly building materials or architectural design)



5. Use of sustainable supply chains
(e.g. use of medical devices/drugs made with renewable resources, environmentally-conscious procurement)



6. Initiatives for movement and transportation
(e.g., use of electric/hybrid business vehicles, encouraging employees to walk or use public transportation)

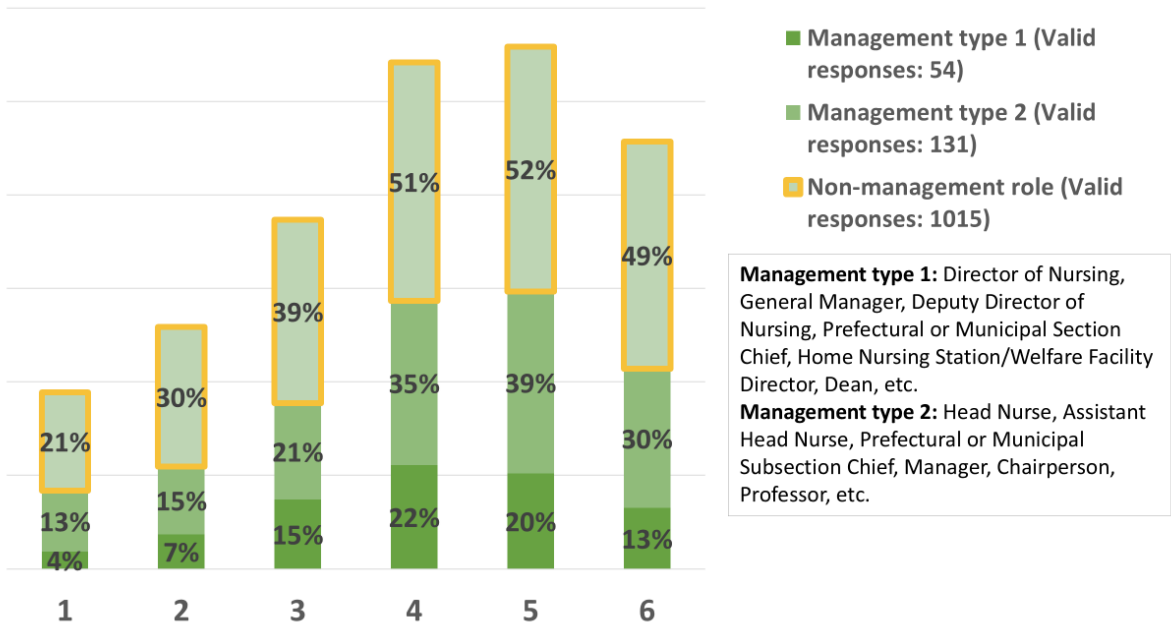


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Breakdown of respondents who selected “I don’t know” regarding initiatives at affiliated facilities (By position)

(Conducted August 2024. Valid responses: 847)



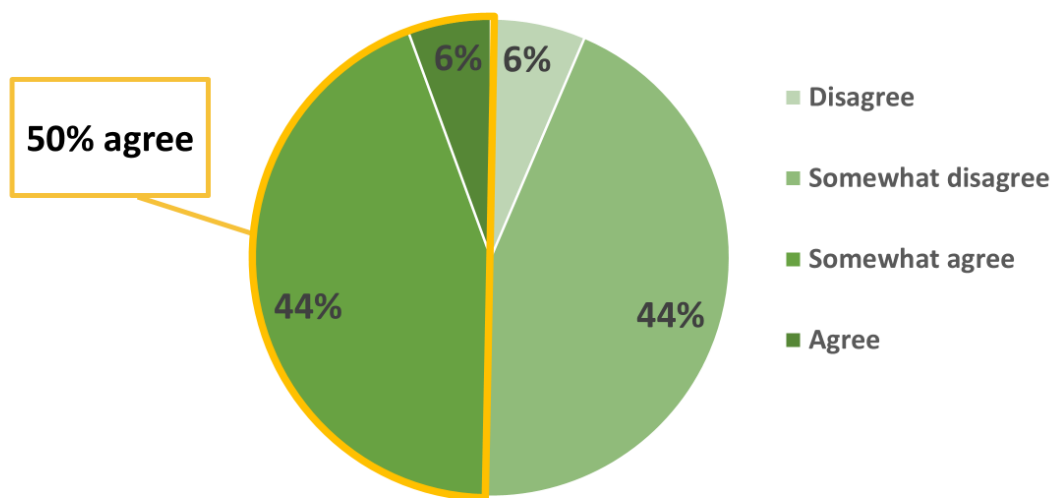
31

13. Approximately 50% of nursing professionals responded that they can play a role in educating patients and service users about the health impacts of climate change



Do you think nursing professionals can play roles in educating patients or client to respond to and prepare for extreme weather events while keeping the health impacts of climate change in mind?

(Conducted August 2024. N=1,200)

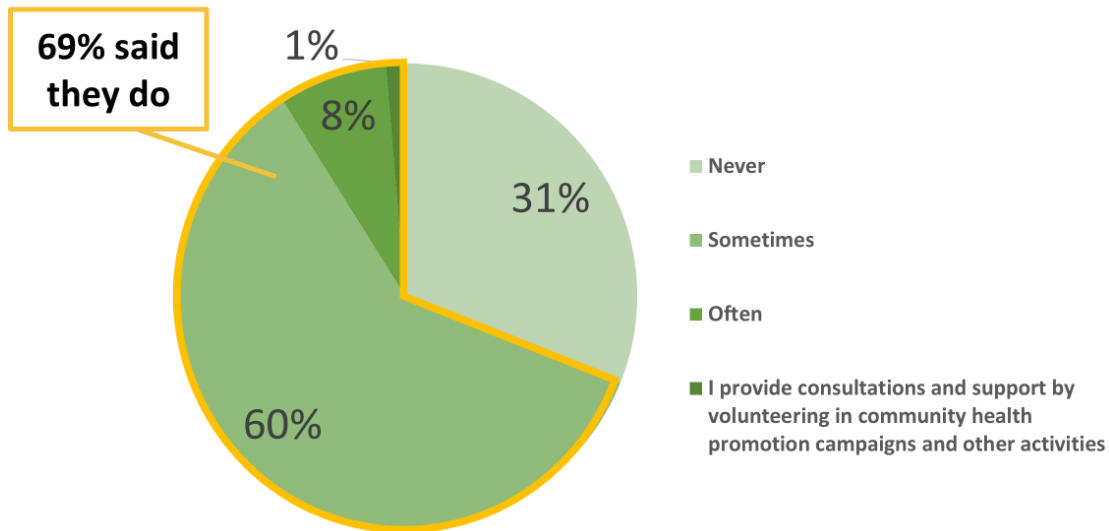


14. Many nursing professionals (69%) responded that when they are not at work, they provide information, consultation, or support regarding health or healthcare to family members, friends, neighbors, and others close to them



When you are not at work, do you provide information, consultation, or support regarding health or healthcare to family members, friends, neighbors, and others close to you?

(Conducted August 2024. N=1,200)



Observations

Based on personal experience, information from the media, and other familiar information resources, nursing professionals in Japan recognize that climate change is occurring and that it is related to extreme weather events. Some respondents also indicated that they consider climate change to be life-threatening. As very few respondents possessed accurate knowledge regarding climate change and health and the environmental impact of the health sector, the survey also revealed that nursing professionals are inadequately prepared to take concrete action.

Based on their understanding of the links between climate change and health or the health sector and the environment, many nursing professionals viewed climate change as an important issue and recognized the need for education on climate change and health. They also recognized the need to actively introduce healthcare services with less environmental impact. However, the survey also revealed that nursing professionals have limited opportunities to learn about climate change and health or to engage in efforts to implement more environmentally-friendly healthcare services at their facilities, and that there are insufficient opportunities to meet the educational needs and the willingness to take action among nursing professionals.

[Awareness Toward Climate Change and Health]

Many nursing professionals (approx. 70%) were aware of the fact that climate change is occurring in every region of the world. Furthermore, as a result of firsthand experiences with extreme weather events, almost all nursing professionals (93%) were aware that some extreme weather events are occurring in Japan, and most of that group (94%) said that climate change is the underlying cause of those events. Among such events, recognition tended to be high toward those that people experience regularly in all regions of Japan, such as high temperatures (96.1%), torrential or heavy rain (86.4%), typhoons and storm surges (74.0%), flooding (71.0%), and drought (62.1%). Information like the increase in heat stroke cases or emergency room visits due to heat is now highly visible or often reported in the mass media or in real-world nursing settings, which may have made many nursing professionals recognize the immediate and life-threatening nature of extreme weather events.

Many of the nursing professionals who have experienced the extreme weather events that are occurring in Japan thought that unless action is taken to address climate change, climate change will continue to affect future generations. This finding suggests that respondents recognize that extreme weather events are not accidental or temporary, but may continue occurring in the future.

[Knowledge Concerning Climate Change and Health]

The survey found that very few nursing professionals possess accurate knowledge about climate change and health or the environmental impact of the health sector, and that they are not sufficiently prepared to take concrete action. One reason for this may have been the fact that they have limited opportunities to learn about these topics. Most nursing professionals learned what they knew about climate change and health from sources like the mass media and social networks, while a small minority (13.5%) obtained their knowledge from systematic or specialized educational opportunities.

Taking a closer look at respondents' knowledge of climate change and health by qualification, approximately 60% of midwives and 50% of public health nurses were familiar with the information regarding climate change provided in the survey. One factor that may have resulted in half of public health nurses possessing accurate knowledge is that they require the knowledge and skills to be able to consider the relationships between the health of community members and the external environment on a routine basis. At the same time, one factor that may have contributed to the majority of midwives having accurate knowledge may have been because 33% of midwives who knew about climate change and health reported that they obtained such knowledge from "Resources provided by academic societies and professional organizations (e.g. articles, scientific conferences, specialized websites)." In fact, when COP28 was held in 2023, the International Confederation of Midwives (ICM) presented an open letter calling for climate change countermeasures.⁷ That letter was also endorsed by the Japan Academy of Midwifery,⁸ which commented on the health impacts of climate change on people in Japan and urged midwives to take action. As for initiatives for climate change from domestic academic societies in recent years, the Japan Primary Care Association presented a declaration titled the "Declaration of Climate Emergency in Primary Care (Hamamatsu Declaration)"⁹,¹⁰ and climate change has become a topic of discussion at academic conferences held by groups like the Japan Society of Nursing¹⁰ or the Japan Society of Disaster Nursing.¹¹ However, there are few domestic professional associations that are mainly active in the field of nursing that have taken concrete action or stated that they will take measures for climate change. Based on the high percentage of certified midwives who were familiar with the items shared and their association with sources of information, we can infer those efforts from professional or academic associations are a driver of awareness and interest in the topic of climate change and health among their members.

[Professional Views on Climate Change and Health]

Many nursing professionals viewed climate change as an important issue. Their reasons included, "strongly connected to life and the health sector," "need to address the issue for future generations," and "health sector also has a negative impact on the environment," showing that respondents understood the links between climate change and human life, or between the health sector and the environment.

Regarding willingness to learn, most respondents also said they feel the need to learn about climate change and health. This was backed by the fact that nursing professionals recognized climate change and health as a vital issue, with the top reasons being, "because it is life-threatening, and nursing professionals must know about it," "nursing professionals should better understand the health sector's negative environmental impacts," and "nursing professionals must address the issue for patients and service users today, and for future generations." Regarding what to learn, respondents expressed a high need for practical knowledge related to their professional duties, and

⁷ Ganapathy D, Tzeli M, Vivilaki V. Midwives: Essential guardians in the climate crisis journey. *Eur J Midwifery*. 2024 May 22;8. doi: 10.18332/ejm/188196. PMID: 38779537; PMCID: PMC11110073.

⁸ The Japan Academy of Midwifery. 2023. Midwives to Participate in Climate Measures (ICM). https://www.iyosan.jp/modules/topics/index.php?content_id=115. (Accessed November 4, 2024)

⁹ The Japan Primary Care Association. 2024. Declaration of Climate Emergency in Primary Care (Hamamatsu Declaration). <https://sites.google.com/view/hamamatsu-sengen/> (Accessed November 11, 2024)

¹⁰ The 55th Annual Meeting of the Japan Society of Nursing. Lecture information. <https://confit.atlas.jp/guide/event/jna2024/subject/SL1-1/detail>. (Accessed November 7, 2024)

¹¹ The 26th Annual Conference of the Japan Society of Disaster Nurses. Program. <http://jsdn26.umin.jp/program.html>. (Accessed November 7, 2024)

selected items such as, “Health impacts and disease,” “Preparing for extreme weather disasters and other emergencies,” and “Specific methods of implementing climate-friendly practices in routine duties.”

By affiliated facility, respondents’ attitudes toward the need to learn about climate change and health was lower at hospitals (76%) compared to clinics (84%), in-home care facilities (83%), long-term care welfare facilities (83%), nursing educational institutions (85%), government agencies (89%), or other (90%). The most frequently-selected reasons among respondents who did not feel it necessary to learn about climate change and health were, “There are other things to learn that take priority” and “I do not have time to learn.” It can be inferred that this was rooted in the low priority assigned to the topic within routine duties or a lack of energy to spare for the new topic of climate change due to factors like the high level of expertise required at health facilities handling treatment for acute conditions, busy work schedules, or busy training schedules at individual facilities.

[Awareness Toward Climate Change and Health]

While the minority of respondents said that they did not know the volume of health sector GHG emissions, emissions were considered a problem by almost all of the respondents who recognized that Japan is experiencing extreme weather events. More than half of respondents (approx. 60%) said, “The continued growth of GHG emissions beyond current levels is concerning.”

Based on that awareness, most nursing professionals (approx. 80%) expressed the opinion that when available, healthcare services with less environmental impact should be proactively adopted, but when asked about obstacles to adopting such services, about half of respondents said they do not know specific methods of doing so.

Circumstances surrounding organizational efforts to reduce GHG emissions

Among initiatives for the environment at their affiliated facilities, responses showed that nursing professionals’ routine duties tended to include more waste management (e.g., waste separation, waste reduction) or the use of digital technology (such as electronic medical records or online medical examinations) compared to other initiatives. At the same time, many responded “I do not know” for initiatives related to organizational management, such as facility design or supply chains. We also found that respondents were less likely to respond “I do not know” the higher their position.

One system that supports such efforts from health facilities is the “Plan for Global Warming Countermeasures” (approved by Cabinet Decision on October 22, 2021).¹² It obligates government agencies and related organizations including administrative organizations or facilities that are certified as independent administrative agencies to formulate and proactively implement action plans for items such as suppressing GHG emissions in line with the purpose of that plan or similar plans.

There are also efforts to reduce GHG emissions from the Council for the Promotion of Global Warming Countermeasures in Hospitals, which includes organizations like the Japan Hospital Association and the Japan Medical Association. By conducting the “Follow-up Survey on the Action Plan for Achieving a Low-carbon Society in Hospitals” every other year starting in 2017, the Council has been working to grasp carbon dioxide emissions, the energy consumption that leads to those emissions, and emission reduction activities at private hospitals, which are hospitals established by parties other than national, prefectural, or municipal governments and that account for approximately 80% of all domestic hospitals. The Council reports its findings every year at the “Follow-up Meeting for the Action Plan for Achieving a Low-carbon Society” held by the Ministry of Health, Labour and Welfare (MHLW).¹³ However, for private hospitals, formulating action plans to reduce GHG emissions is left to the autonomy of each organization, so many organizations have yet to formulate such plans. Furthermore, the follow-up survey covers 1,300 institutions that were selected from among the 6,092 private hospitals with 50 or more care beds, so information only reflects the efforts of a limited portion of private hospitals.

¹² Ministry of the Environment. 2021. Plan for Global Warming Countermeasures. <https://www.env.go.jp/content/900449122.pdf>

¹³ MHLW. Follow-up Meeting for the Action Plan for Achieving a Low-carbon Society. https://www.mhlw.go.jp/stf/shingi/other-roudouseisaku_516282.html. (Accessed November 7, 2024)

Our survey findings show that most nursing professionals were unaware of organizational initiatives for the environment or did not know specific methods of implementing more environmentally-friendly healthcare systems, which suggests that organizational initiatives for the environment are centered around management or administrative staff at health facilities. It is likely that there is a significant gap in awareness or actions for reducing GHG emissions among administrative staff and other members of staff, starting with nursing professionals.

Comparison with other countries

Previous studies conducted overseas reported that nursing professionals are aware of the health impacts of climate change, but their knowledge varies. It has also been reported that nursing professionals feel they have a responsibility to address climate change, but they are unequipped to do so. On top of this, many preceding studies show that nursing professionals are willing to learn about climate change and health, but educational opportunities are limited. (The following excerpts are from the literature cited.)

In a 2012 survey conducted in the US,¹⁴ approximately half (51.3%) of health professionals said that they have a responsibility to address the human health impacts of climate change, but the majority (61.9%) said that they lack the ability or are unprepared to do so. Only 4% possessed accurate knowledge regarding the human health impacts of climate change, and 19% identified no health impacts of climate change.

A 2016 survey conducted in China¹⁵ reported that 76% of nursing professionals recognized that climate change impacts human health. Thirty-two percent of respondents learned about the topic from social media while 19% learned about it at school, suggesting that educational opportunities are limited. Almost all nursing professionals (83%-96%) indicated that they wanted to learn about climate change and sustainable healthcare.

A qualitative study conducted in Canada in 2020¹⁶ found that participants had varying levels of knowledge about climate change itself or understanding about the relationship between climate change and health or practice. However, they did understand that their routine duties consume vast resources, and that some of their behaviors could be considered a waste of resources. It also reported that exposure to the topic allowed participants who did not understand the relationship between climate change and practice at the start of the survey to take the time to reflect upon their own day-to-day activities and deepen their understanding of the role of nursing in addressing climate change.

In a qualitative study conducted in Finland in 2021,¹⁷ nurses felt that their professional knowledge and training was insufficient for responding to the health impacts of climate change. It reported that the lack of education on climate change in training programs and on-the-job education for nurses has left them inadequately prepared to respond to patients' health issues.

Comparison with physicians in Japan

In a 2023 survey conducted among physicians in Japan, four out of five physicians (78.1%) felt that climate change is having impacts on human health.

As for knowledge on climate change and health, correct knowledge was insufficient among most Japanese physicians (36.1% answered more than half of the survey's questions correctly). There was not widespread knowledge of the term "planetary health," which was recognized by fewer than one in five respondents (18.2%). Their educational opportunities were also limited at medical schools (6.5%) or during specialized training (11.6%). While findings cannot be directly compared because the questions to determine knowledge among physicians did not cover the same content as those used to examine knowledge among nursing professionals in this survey, the

¹⁴ Barbara J. Polivka, Rosemary V. Chaudry, et al. Public Health Nurses' Knowledge and Attitudes Regarding Climate Change. *Environmental Health Perspectives* 2012. Volume 120, Issue 3. Pages 321 – 325. <https://doi.org/10.1289/ehp.1104025>

¹⁵ Juan Xiao, Wei Fan, et al. Nurses' knowledge and attitudes regarding potential impacts of climate change on public health in central of China. *International Journal of Nursing Sciences*, Volume 3, Issue 2, June 2016, Pages 158-161. <https://doi.org/10.1016/j.ijnss.2016.04.002>

¹⁶ Kalogirou, M.R., Dahlke, S., Davidson, S. et al. (2020), Nurses' perspectives on climate change, health and nursing practice. *J Clin Nurs*, 29: 4759-4768. <https://doi.org/10.1111/jocn.15519>

¹⁷ Tiitta L, McDermott-Levy R, et al. Finnish nurses' perceptions of the health impacts of climate change and their preparation to address those impacts. *Nurs Forum*. 2021; 56: 365–371. <https://doi.org/10.1111/nuf.12540>

findings do reveal that many physicians and nursing professionals lack accurate knowledge (42% of nursing professionals in this survey knew all items provided) and have limited opportunities for education.

As for the percentages of respondents who would prefer more environmentally-friendly and sustainable products, equipment, or other items if such options were available, there was not a significant gap between physicians (approx. 70%) and nursing professionals (78%).

As for the main obstacles for taking action, physicians selected “Lack of information or resources” (54.4%), “Insufficient knowledge” (52.7%), and “Lack of time” (51.7%). The most frequently-selected obstacles to action among nursing professionals were “I do not know specific practices to address the issue” (49.2%), “There are other duties and tasks that should be prioritized” (46.6%), and “Insufficient knowledge about the relationship between climate change and health” (45.3%), suggesting that these groups face similar challenges.

The above findings suggest that although physicians in Japan recognize the health impacts of climate change, like nursing professionals, few have knowledge about climate change and health, and their educational opportunities are limited. While both groups expressed high motivation to take action to reduce GHG emissions, they face similar obstacles that prevent them from doing so, such as insufficient knowledge, skills, or preparation, or the low priority assigned to the issue.

Conclusion

This survey found that many nursing professionals in Japan are aware of climate change and how it is related to health, but those with accurate knowledge are limited. In addition, many nursing professionals indicated that they recognize climate change as an important issue, that they wish to learn about the relationship between climate change and health, and that they want to work to reduce GHG emissions. These findings on the awareness, knowledge, and attitudes of nursing professionals in Japan do not diverge significantly from those in other countries and were similar to those of physicians in Japan.

On the other hand, limited educational opportunities and the absence of organizational initiatives at their affiliated facilities are factors preventing nursing professionals from learning or taking action as they wish.

Needs related to learning:

Our survey found that there may be a difference in knowledge possessed by certified professionals according to the rate at which they obtained their information from academic organizations. The number of nursing professionals who possess accurate knowledge is likely to increase if professional associations, academic societies, and other such bodies handle climate change in a manner that is related to their areas of specialty or interest and establish more educational opportunities

Needs related to practice:

The primary concern of nursing professionals is caring for patients, so environmentally-friendly practices are not prioritized in hospitals, clinics, and other healthcare settings. However, such practices can be considered an extension of routine duties like waste management, energy management, and the use of digital technology. As many nursing professionals do not know the volume of health sector GHG emissions or about the efforts to reduce GHG emissions at their organizations, it is likely that spreading awareness toward the environment could allow for such efforts to proceed in a less burdensome manner. Most nursing professionals serving at healthcare facilities are nurses, so making this group more aware of environmentally-friendly practices is likely to result in changes to both tangible aspects like facility design or systems, as well as to intangible aspects like facility management and work practices.

Nursing roles are the most common health sector professions, and they not only actively serve on the frontlines of healthcare during emergencies, but are also the healthcare professionals that are the closest to the daily lives of citizens. Many nursing professionals have opportunities to provide health and medical information, consultation, and support to people close to them, including in their private lives. Furthermore, approximately half of them believe that they can play roles in educating patients and service users. Ensuring nursing professionals can acquire accurate knowledge regarding climate change and expanding the scope of their duties accordingly is likely to result

in them playing key roles in the formulation of climate change adaptation and mitigation measures as advocates and protectors of citizens, or as climate change policy advocates.

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Ethical approval

This study was approved by the Niigata University Research Ethics Committee (Approval number: 2023-0358).

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Conflicts of interest

The parties who conducted this study declare no conflicts of interest.
