



RAN RUN TIMES



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Time to increase our heatstroke IQ

One effective measure for decreasing the number of heatstroke patients in Japan is WBGT (Wet Bulb Globe Temperature), which shows the risk of heatstroke.

It incorporates humidity, solar radiation and temperature. When WBGT exceeds 31 degrees, it warns of high risk of heatstroke and recommends refraining from exercise.

In recent years, the number of heatstroke patients in Japan is on the rise. Heatstroke has become a significant social issue, as Japan has more casualties from the condition than any other country. On May 1, 2019, the day Japan ushered in the Reiwa era, many of those who visited the Imperial Palace to celebrate the crown prince acceding to the throne were transported to hospital by ambulance because of heatstroke symptoms.

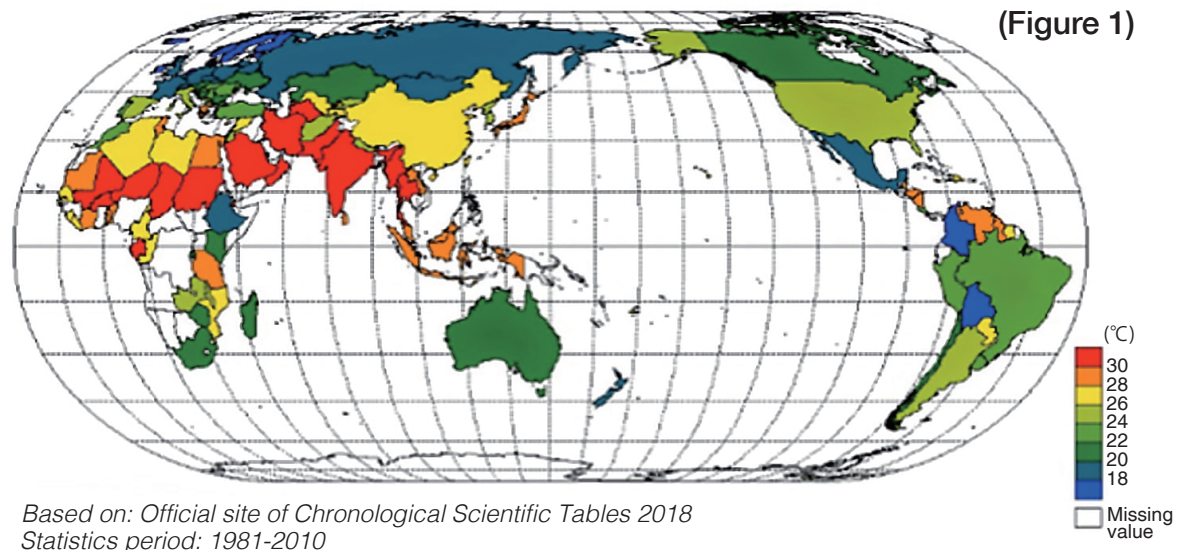
Cases of heatstroke start in May. At this time of the year, though the temperature is not high, WBGT shows a high risk of heatstroke. This fact shows that temperature alone is not an indicator of the risk of heatstroke.

To verify the effectiveness of WBGT, Ochanomizu University Senior High School students conducted a survey. They studied the correlation among the number of heatstroke patients and the following three elements: temperature, humidity and WBGT.

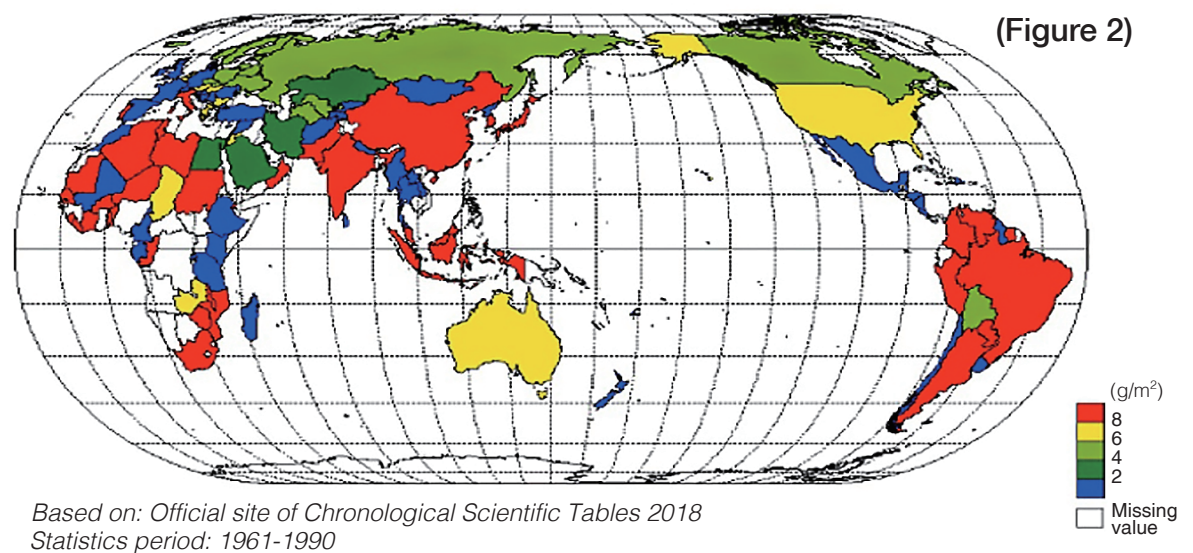
Comparing these correlation coefficients, the temperature and humidity values vary depending on the region. WBGT shows consistent correlation regardless of the climatic condition, making it superior to temperature and humidity.

According to Figures 1 and 2, Japan has high temperature and humidity for half of the year. WBGT, which considers various factors, is an applicable indicator. However, there are few countries which have such a climate, and as a result, about 70% of foreign visitors to Japan have experienced

The average temperature in the warmest month



The average humidity in the warmest month



symptoms of heatstroke.

Using WBGT, people could grasp the risk of heatstroke at a glance. In this way, WBGT is an effective indicator in Japan, yet its overall recognition is low. Only 8 percent of Japanese know about and are able to explain WBGT, while 65 percent Japanese are unaware of it. As a result, such people don't have the means of accurately knowing the risk of heatstroke.

To decrease the number of heatstroke patients, it is necessary to raise awareness of WBGT. Heightened visibility of WBGT will lead to a decreased number of heatstroke patients.

By Natsumi Hara, Nonoka Ishii, Yumi Orikawa, Nana Kiyota, Rena Suganuma and Mayu Takano

ABOUT US

We are from class Ran in the third year at Ochanomizu University Senior High School. Our school is in Bunkyo Ward where many schools are concentrated.

Our school is designated a SGH (Super Global High School) by the Ministry of Education, Culture, Science and Technology. SGH aims to foster leaders who

will be able to play active roles on the international stage. As a part of SGH, we take a class called "exploring." In the class, each of us focuses on a social

issue and explores a solution. The results of our activities are introduced in this paper. Please read our paper and learn more about current social issues.

FUTURE PLANS

A streamlined support system for disaster victims

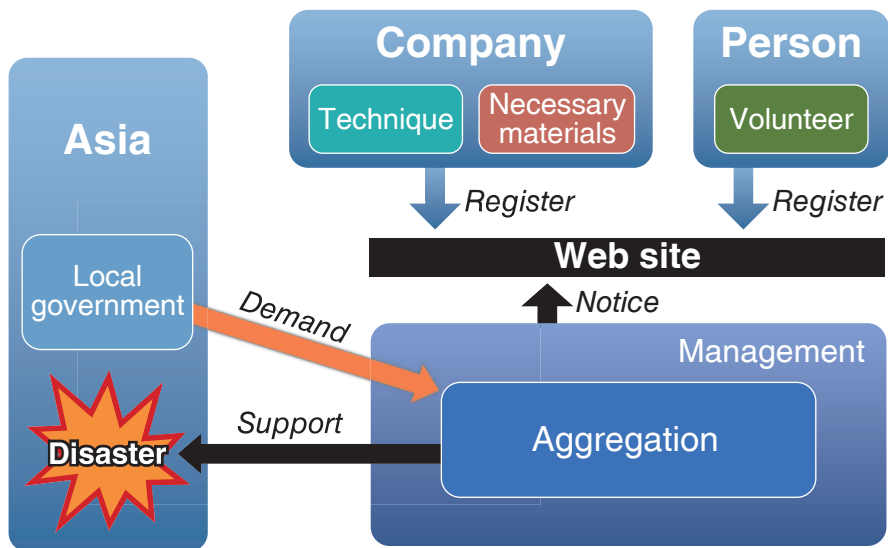
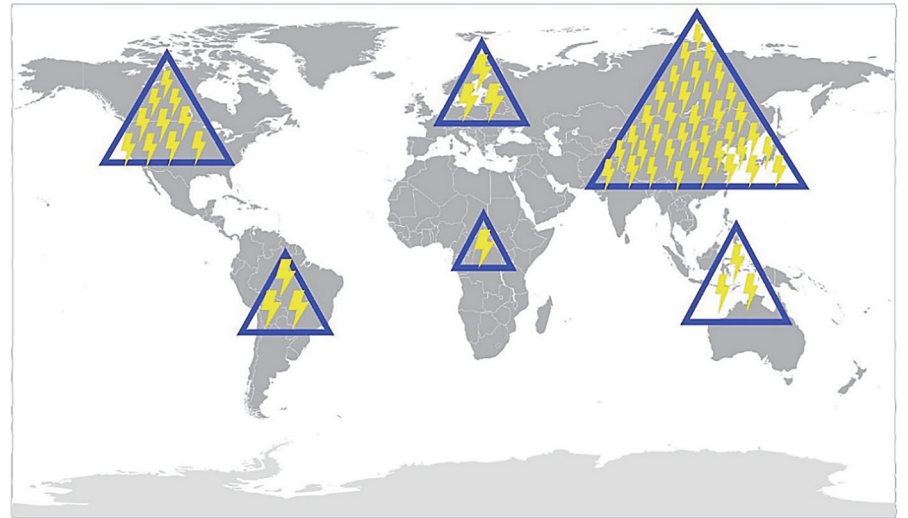


Figure by: Miki Tanaka



Source: Natural Hazard Risk Atlas 2015

There is a large number of disasters in Asia. According to “the ranking of cities having high risk of disaster,” 75 percent of the top 100 are in Asia. This part of the world thus requires extensive support. However, disaster-stricken areas have faced many problems with regard to support.

One of them is confusion caused by using SNS. For example, in the Great East Japan Earthquake in 2011, there were some areas that had to throw away excessive provisions because of information that wasn’t up to date.

Based on such facts, a group

belonging to Ochanomizu University Senior High School proposes a new community of support during disasters using the Internet. Through such a network, relief supplies could be provided to match demand.

The system for such a community is not complicated. Companies, local governments and volunteers would register with the service, and if a disaster occurs, local governments suffering from damage can send data about necessities and conditions of damage to the community. Companies and volunteers that can support the

government and organizers of this network would then coordinate these demands and supplies.

The benefit for companies to join this system is that they can promote their products through the support they provide. For example, when children were confined in an underwater cave in Thailand last year, a submarine that Elon Musk tried to use to help with their rescue drew public attention. In his case, he is famous as an entrepreneur. However, the technology that his company had wasn’t well known, so he drew public attention through this incident.

Unknown companies with similarly high-level technology could also become well-known. Such a network would also make it possible to send necessities efficiently by meeting the needs of victims. The group comprising students at Ochanomizu University Senior High School thus believe that such a system would help with rebuilding after a major disaster.

By Miki Tanaka, Tomomi Osawa, Chiharu Kawano, Ayaka Kimura, Jody Aya Nagasawa and Moeka Yoshida

Minpaku offer both rest and glimpse into local life

Minpaku refers to staying in houses whose owners rent them to visitors. In this article, we explore minpaku in the form of staying with the owner as a way learn about and experience the local way of life.

Minpaku has received public attention in recent years as one means of coping with the shortage of accommodations amid a growing number of foreign tourists in preparation for the 2020 Tokyo Olympics and Paralympics. In June 2018, a new law regulating private lodging businesses took effect, allowing anyone to lease a room for up to 180 days a year if they register with their local government in advance. On the other hand, it gives rise to



Left: Playing the "sanshin" Right: Beautiful scenery of Island Ie



Pictures by: Yurika

various problems. We sent a questionnaire to high school seniors who have experienced minpaku to investigate the real situation.

In the survey, about 95 percent of students said their image of Okinawa has changed thanks to minpaku. One student said that she previously thought U.S. forces

in Japan only have an adverse effect on local people. After making contact with residents, she found that there are also advantages, such as the use of funds from hosting U.S. bases to equip hospitals with CT scan equipment, among others.

Also, by listening to people who have experienced war, they were able to learn many lessons,

including the responsibility to be aware of such matters and the shortage of people who can pass on their stories.

Also, 74 percent of the students said they want to use minpaku again. At present, the Japanese government has introduced legislation on private minpaku to make them safer.

As minpaku offer the advantage of learning about the local area and people, they should be promoted further among both Japanese and foreign visitors.

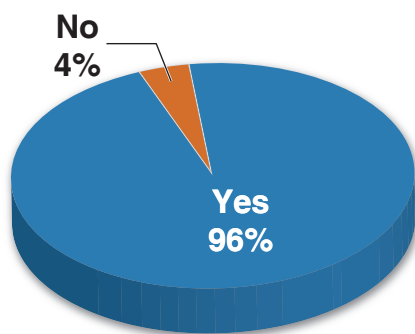
By Manami Furukawa, Yurika Kozawa, Haruka Nakayama, Natsumi Mori and Yui Yamamoto

If you're happy and you know it, clap your hands

These days, about a half of Japanese feel stressed, according to the “Special Survey on Industrial Safety and Health” conducted by the Ministry of Health, Labour and Welfare in 2017.

Stress is a state of tension felt from stimulation, demands or external threats. There are four types of stress factors: environmental, physical, psychological and social. As stimulus can be felt from environmental changes, it can be assumed that what makes people feel happy can also be a cause of stress. If people continue to live with unaddressed stress, eventually they may suffer from more serious conditions such as depression (which is a common and serious medical illness that negatively affects how you feel, the way you think and how you act) and PTSD (post-traumatic stress disorder, a mental

Do you feel stress?



Based on a survey covering 221 high school students

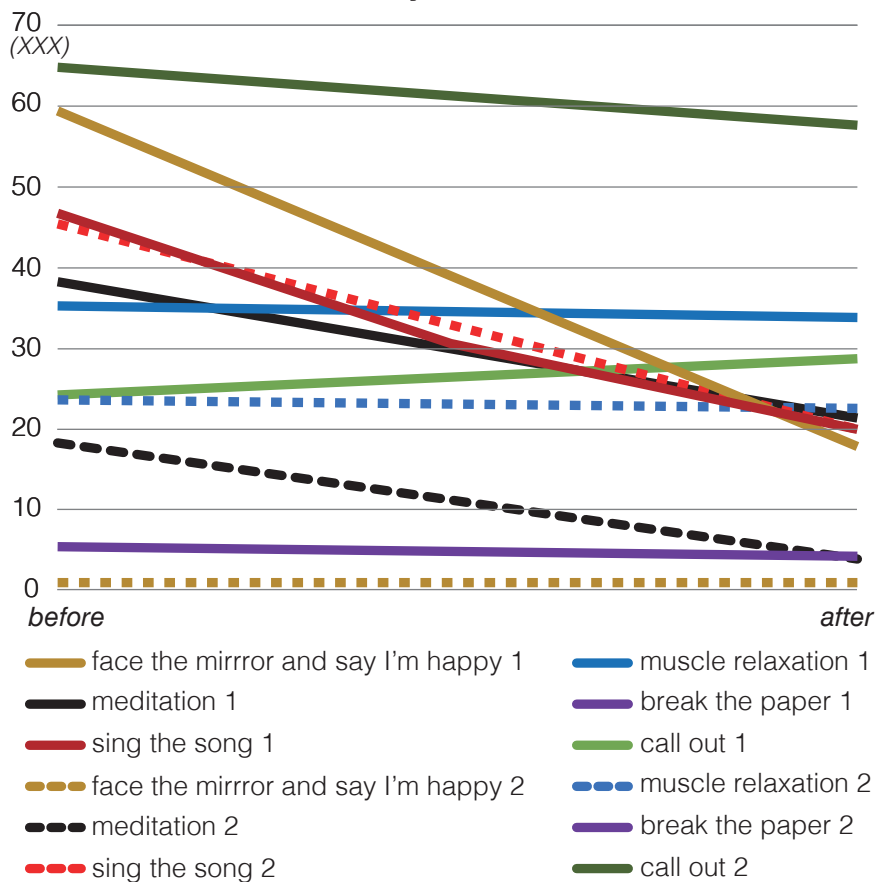
health condition triggered by a terrifying event, either experiencing it or witnessing it).

A group of students at Ochanomizu University senior high school conducted a research study on the stress of high school students, covering 221 students.

According to the results, 96 percent feel stressed (Graph 1). The study also showed that 85 percent of them have their own way to reduce stress.

The group then chose some of the ways to reduce stress from the questionnaires and did an experiment to see whether they are effective. Some of the choices included facing a mirror and saying “I’m happy,” muscle relaxation (for your reference,

How effective are the ways to reduce stress? (Graph 2)



we put a QR code of the video that shows how to do muscle relaxation), meditation, tearing paper, singing songs and calling out. They used an application (PUMSCO) to measure the amount of stress before and after the experiment and compared them (Graph 2). This graph shows that

the effect depends on individual, so it is important to find one’s own way to reduce stress.

By Moena Arai, Yuzuki Akahoshi, Sayako Takei, Akemi Fukuzumi, Chisa Mori and Mao Yamada

How to do muscle relaxation



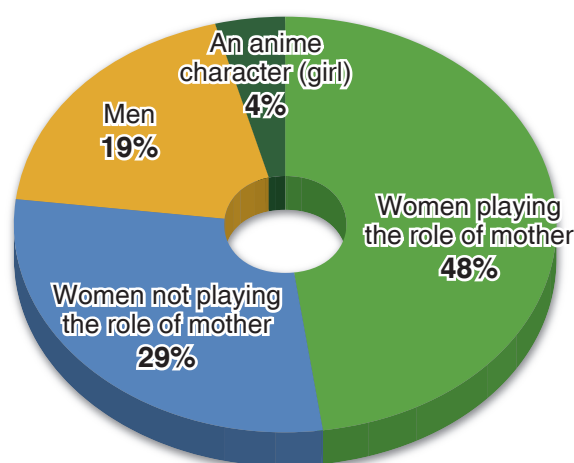
Does media program our unconscious biases?

These days, diversity is essential. Ochanomizu University high school students think closing gender gap is the key to realizing diversity. Compared with other countries, however, the gap between men and women in the fields of politics, education and employment is still big in Japan. According to “The Global Gender Gap report 2018,” Japan ranked 110th out of 144 countries.

The students believe that unconscious bias is one of the reasons behind the gender gap. They also believe that it comes from media such as TV, SNS, advertisements, and so on. They created a guideline to improve awareness of TV audiences, in the hope that such people view TV programs and commercials in a critical manner.

There is a big gender gap in the media field in Japan. According to research conducted by the students, 81 percent of the actors who did the laundry in TV commercials for laundry detergent broadcast in 2018 were women. Moreover, 48 percent

Who is in charge of laundry?



of the actors played the role of a mother in the commercials. However, there were no men shown playing the role of a father.

Such TV commercials can instill in large audiences the idea that it is natural for women to do housework. The students believe advertisements that can be associated with gender roles contribute to unconscious bias.

On the other hand, some companies actively tackle gender biases. The students chose ten companies that broadcast TV commercials from Japanese listed companies.

The students then sent the companies questionnaires. According to the survey results, nine of them tried not to make a gender discriminatory commercial. In the future, the current state of advertisements may change favorably.

Following these results, the students appealed to audiences using the media to reform their awareness. It is important to gain media literacy in order to reduce unconscious bias. To build a diverse society, it is necessary for both the sender of information and the receiver to think about the best way to present it.

By Narumi Onoda, Nozomi Aoki, Yuka Kashima, Kana Shigyo and Kisaki Nakamura

IMPROVING LIVES

3D-printed structures could save lives in disaster

Technology for building houses by using 3D printers is making great advances. It has not been introduced in Japan yet, but various buildings are being constructed around the world.

For example, in 2015, a five-story apartment was built in China through such technology. Also, in 2016, an office was built using a 3D printer in the United Arab Emirates.

3D printers are different from ordinary printers. Following 3D CG data, they can be used to make solid pieces with resin and concrete.

3D printers have a variety of applications; for example, for the most part, in the manufacturing industry, the medical field, the aerospace industry and advanced research. Building a house using a 3D printer requires a large printer that can be moved around to and from construction sites. Such a printer can be used to build a wall by draining layered concrete.



Picture by: WIRED

Construction site of a building made by 3D printer



Picture by: Tabi Cafe

Building a wall by draining layered concrete

3D-printed buildings have some remarkable benefits. Among them, the costs and construction time are reduced. According to the website of NGO New Story, it costs approximately \$6,000 and it takes 24 hours for one home to be built using a 3D printer. If we think of building normal housing, it costs at least \$100,000 and takes several months to build one home. As we can save resources, it is good for environmental protection, too.

Because of Japan's geographical conditions, serious disasters such as major

earthquakes and typhoons occur frequently. Japan is said to be a very disaster-prone country. In the case of a serious disaster, there tends to be a shortage of temporary housing. In the Great East Japan Earthquake on March 11, 2011, there were many people who had to stay in their car because of insufficient temporary housing. Such conditions can lead to economy class syndrome, which can cause blood clots. The problem would be solved if we used 3D printers to build as many temporary houses as possible.

However, according to the Building Standards Law of Japan, constructing buildings using 3D printers has not been permitted yet. As sufficient shelter and temporary housing can prevent poor health conditions and even death from spending nights in cramped environments like cars, Japan should introduce 3D printers for building such structures as soon as possible.

By Mika Kodera, Moe Saito and Hikaru Taniguchi

'Spectrum' as an approach to gender

In order to realize a comfortable society for transgender, the notion of "spectrum" should be spread all over the world. "Spectrum" is the idea that people have anatomical gender and a self-identify gender. People whose anatomical gender corresponds with their self-identify gender are called "cisgender," while those for whom there is no such correspondence are called "transgender."

The figure at right shows an example of a person whose self-identify gender is male and anatomical gender is female.

"Coming out" means informing others that one is transgender, however, a number of people are reluctant to come out because cisgender account for about 90 percent of people (research on LGBT in 2018 by Dentsu) and there is still discrimination against transgender. Mainly because of distinctions between cisgender and transgender, transgender are pushed to decide

which gender is their preference. There are two examples that illustrate this circumstance.

First, transgender tend to refrain from using restrooms because the use of multipurpose restrooms for people with physical disabilities and LGBT people can lead to an unexpected coming out.

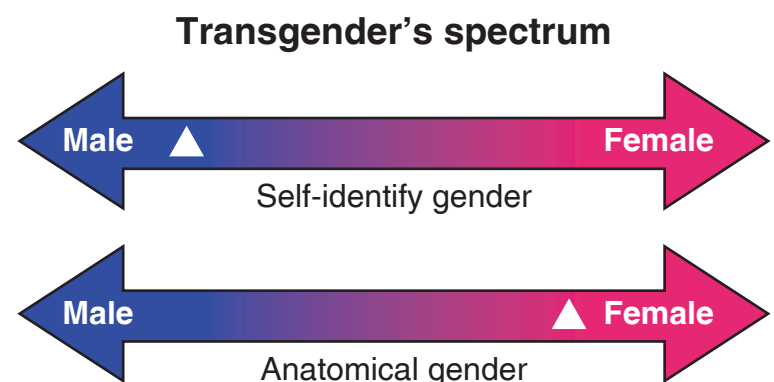
Second, school uniforms are used at almost all schools. However, transgender feel incongruous when they wear a uniform corresponding with their anatomical gender. They are also worried that they are looked down on by others.

Recently, awareness of transgender is expanding (in the Dentsu study, people who are familiar with the term LGBT account for 70 percent), but it is difficult to realize a society that is comfortable with all genders. Therefore it is necessary to spread the notion of "spectrum." In other words, it is essential to understand that there are not

only two genders, male and female, but a variety of them, including transgender.

There are differences between anatomical gender and self-identified gender, which apply to all people, including cisgender. Understanding that all people have a gender reduces the weight of the term LGBT, as well as discrimination against such people.

By Hinako Karino, Narumi Okazaki, Kazusa Kameoka and Natsumi Takagi



Picture by Narumi Okazaki

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