NOV 5, 2021

CHOATE PUBLIC HEALTH

VOLUME 5 | ISSUE 1

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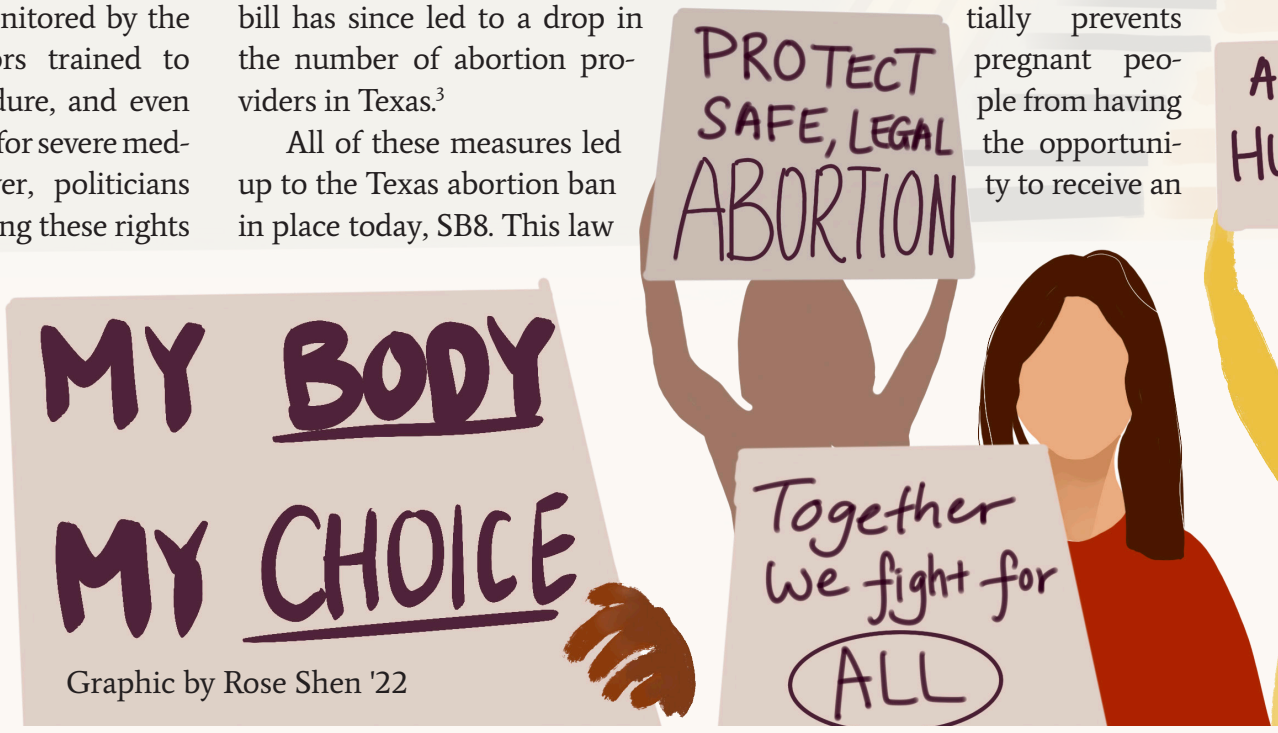
By Ellie F

The Texas Senate Bill 8 (SB8) was signed into law by Texas Governor Greg Abbott and took effect on September 1, 2021.[1] It outlaws all abortions once cardiac activity is detected in the fetus, which can be as early as six weeks into conception. Applying to extreme circumstances like rape and incest, the Bill renders Texas the most restrictive state in terms of abortion regulations.[2] Even more shockingly, the Supreme Court refused to block the law in a 5-4 vote, making the Law the first of its kind to be implemented successfully.

Since the *Roe v. Wade* case in 1973, Texans have had access to abortion clinics monitored by the government, doctors trained to perform the procedure, and even late-term abortions for severe medical cases.[3] However, politicians have been challenging these rights in the past decades to put forth anti-abortion policies. In 2003, Texas passed the "Women's Right to Know Act," which allowed for doctors to provide their patients with misleading information about abortion procedures. The Act also dictated that patients had to wait 24 hours before receiving the procedure. Additionally, surgeries after 16 weeks of pregnancy should be performed in an ambulatory surgical center.

Two years later, a more restrictive law banned all abortions after 24 weeks of pregnancy and required parental consent for minors seeking an abortion. Afterward, Texas imposed further restrictions through the 2013 House Bill: abortions after 20 weeks were banned, and doctors prescribing abortion medication must follow a state-mandated protocol. This bill has since led to a drop in the number of abortion providers in Texas.[3]

All of these measures led up to the Texas abortion ban in place today, SB8. This law poses even more problems for pregnant people and infringes on their rights over their bodies. Around the sixth week of gestation, when cardiac activity normally begins, the person is often unaware of their pregnancy. By the time they realize they have missed a menstrual cycle, they would already be at least four weeks pregnant. That leaves only two weeks to make a possibly life-altering decision of whether or not to get an abortion. Not everyone tracks their period, so some might not recognize the implication of missing a cycle before it is too late.[2] Through the stringent dictums, SB8 essentially prevents pregnant people from having the opportunity to receive an



Graphic by Rose Shen '22

ONS OF THE
NATE BILL 8

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abortion. Justice Elena Kagan asserted that "a woman has a federal constitutional right to obtain an abortion during that first stage."[4]

The number of affected people in Texas is appalling: 7 million. These people are forced to either keep the baby or find other ways to receive an abortion. Not everyone can afford the trip for an out-of-state procedure, especially those of low income or confining obligations. Purchasing abortion pills online might be a more convenient and affordable alternative, but it can also result in medical complications and legal consequences if the patient seeks follow-up care. Even outside the state of Texas, abortion providers or people who help Texans receive abortions after the six-week limit can be sued and even sentenced to prison. Such restrictions and punishments result in the criminalization of many people who are in need and have the right to care for their body.[5] The lack of options offered by the government puts a vulnerable population at risk both legally and medically.

As the fight to remove SB8 is in full force, doctors, too, are under pressure. Texas doctor Alan Braid was sued by Arkansas lawyer Oscar Stilley for performing an abortion after the Bill was put into place. Dr. Braid wrote for *The Washington Post*: "I acted because I had a duty of care to this patient, as I do for all patients, and because she has a fundamental right to receive this care."[6] The lawsuit marks a protest against the legitimacy of SB8 and the ongoing reformation of justice and human rights.

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AFGHANISTAN'S PUBLIC HEALTH CRISIS UNDER THE TALIBAN

By Mealy Cronin '23

On August 30, 2021, after nearly 20 years of conflict, the last of the U.S. troops were flown from Afghanistan, completing the final phase of the frenzied U.S. withdrawal. On the next day, August 31, United Nations (UN) Secretary-General António Guterres warned that "a humanitarian catastrophe" looms over Afghanistan's healthcare system post-U.S. withdrawal.[1]

Between 2001 and 2021, the U.S. involvement in Afghanistan meant that hundreds of millions of dollars each year were donated towards essentials, such as food, education, and health care. With the Taliban's takeover in mid-August of 2021, international donors, like the World Bank, halted $600 million in health-related funding.[2] This halt will only prevent more of the population from having access to healthcare.

International donations predominantly fund Sehatmandi, Afghanistan's main supplier of health services and supplies, which operates 2,309 medical facilities and benefits tens of millions of Afghans.[2] Without the monetary aid, health facilities in the country are left without medicine, medical supplies, and funds for medical workers.

In addition to Afghanistan's government instability, the country is seeing a growing demand for health-related services due to the COVID-19 Delta variant. As of Sept 6, 2021, 153,534 COVID-19 positive cases were reported with 7,141 deaths.[3] Since the Taliban takeover, the International Monetary Fund has restricted credit and assets from the Afghan National Bank — some of which were directly earmarked for COVID-19 response. The World Health Organization reported that since the Taliban's takeover, "Nine of 37 COVID-19 hospitals have already closed, and all aspects of the COVID-19 response have dropped, including surveillance, testing, and vaccination."[4] With 1.8 million vaccine doses unused, the Afghan goal

Graphic by El

of COVID-19 vaccination for 20% of the population is rendered unreachable.

Staff shortages resulting from fear of Taliban reprisal have also whipped up a veritable humanitarian crisis, especially for women and children. When U.S. troops were in Afghanistan, child mortality in Afghanistan fell by 29 percent between 2003 and 2015. Simultaneously, maternal mortality rate was halved from approximately 1,140 per 100,000 people in 2005 to 638 per 100,000 people in 2017.[5] Whether or not a direct result of the U.S. occupation, these gains led to sharp declines in infant, child, and maternal mortality rates over the past two decades. "Allowing Afghanistan's healthcare delivery system to fall apart would be disastrous," said Martin Griffiths, UN Under-Secretary-General for humanitarian affairs and emergency relief coordinator. People across the country would be denied access to primary health care such as emergency caesarian sections and trauma care."[6]

While the sanctions imposed by the UN Security Council are understandable, it is incumbent upon the international community to ensure that they do not restrict the already limited humanitarian assistance. Patricia Gossman, associate Asia director at Human Rights Watch stated, "To prevent a dire situation from becoming even worse, donors should urgently agree to support international agencies and non-governmental groups that can provide emergency aid for food, health, and education, and create a plan to address assistance directly involving the Taliban."[7] Believing that some alternatives exist, Dr. Wahid Majrooh, acting minister of public health in Afghanistan, suggested that "International aid organizations can be paid through different channels — either directly (by governments and aid donors) or through U.N. agencies."[2] Additionally, private aid organizations such as the Bill and Melinda Gates Foundation have promised to fund some Afghan healthcare facilities. Dr. Majrooh hopes that others will follow.

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DO POSITIVE A
REALLY

By Cassatt Bo

Positive affirmations, also known as self-affirmations, are thoughts intentionally created to positively influence one's behaviors, thinking patterns, health, habits, and mood. The affirmations include reminders, statements, phrases, quotes, and any other form of short encouragement or motivation. They are said out loud or thought repeatedly in an effort to quell negativity, such as self-doubt, and push for positive changes in life.[1] Over the past couple of years, social media has spiked the popularity of positive affirmations as influencers post Mindful Monday stories and Positivity Posts. Around campus, students at Choate have likely heard affirmations such as:

"I studied hard, so I will ace this test."

"I am going to finish this assignment tonight."

"My team and I are going to crush Deerfield today."

Do these positive affirmations actually work? Or are they just some hoax spread through social media? The answer is more muddled than a simple yes or no.

Affirmations can affect the brain's shape and functions. For example, repeated affirmations over a long period of time will affect the thoughts through the neuroplasticity of one's brain, or the brain's ability to change by reorganizing itself after damage or experience — for example, a pianist's finger sensitivity is enlarged compared to that of the average person due to years of practice. However, a person does not necessarily need to do something in real life to change their brain and body. The brain easily mixes up what is real and what is one's imagination. Therefore, in the case of positive affirmations, people's brains can still change with consistent affirmations.

Dr. Norman Doidge, psychiatrist and author of *The Brain That Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science*, touched on an experiment in his book in which two groups either visualized or completed finger muscle exercises for four weeks. The group that moved their fingers increased muscle strength by 30% while the group that simply visualized their fingers moving increased muscle strength by 22%.[1] This shows that even though the latter group did not actually complete the exercises, affirming oneself activates the same areas as if the person were actually completing the action or undergoing experience. This causes the brain to percieve the affirmations as facts, and one's actions will follow the positive mentality. Essentially, affirmations change the functions of one's brain through neuroplasticity and tricking the brain into believing that a person is doing something when they are simply positively affirming themself.[2]

In addition to changing the brain through neuroplasticity, positive affirmations activate the positive reward centers of the brain. Functional magnetic resonance imaging (fMRI) have shown researchers that areas of the brain, such as the ventral striatum and ventromedial prefrontal cortex, respond to positive affirmations by decreasing pain and maintaining balance

AFFIRMATIONS WORK?

patwright '24

when stressed. Affirmations also increase activity in the medial prefrontal cortex and posterior cingulate, which act as emotional buffers to negative and distressing information.[3]

However, positive affirmations do not work for everyone. Negativity targeted towards oneself and self-doubt inhibit the affirmations' effects. Affirming oneself without genuine attempts at thinking positively will also negate the affirmations' benefits. Besides, positive affirmations are just the first steps in the right direction; without action following them, the affirmations become less powerful. Yet, when used properly and consistently, self-esteem, hopefulness, motivations, and confidence are boosted. Good habits form, and mental health improves.[3] Here are a few tips to improve the effectiveness of positive affirmations:

Keep them in first person — the affirmations are about you, not anyone else.

Use present or future tense — looking forward in your affirmations are more effective on brain activity than looking at past accomplishments.

Short and powerful is the way to go — this makes the affirmations easy to repeat and exudes powerful feelings to motivate oneself.

Consistently repeating affirmations — the repeated phrases engrain into your mind and become like second nature.[3]

No matter how skeptical one may be about positive affirmations as they have grown in popularity over the past decade, these reassurances are now a part of the daily routine for many. Although affirmations may not work for everyone, they hold a multitude of potential benefits. Affirming oneself for a few minutes every day can only help.

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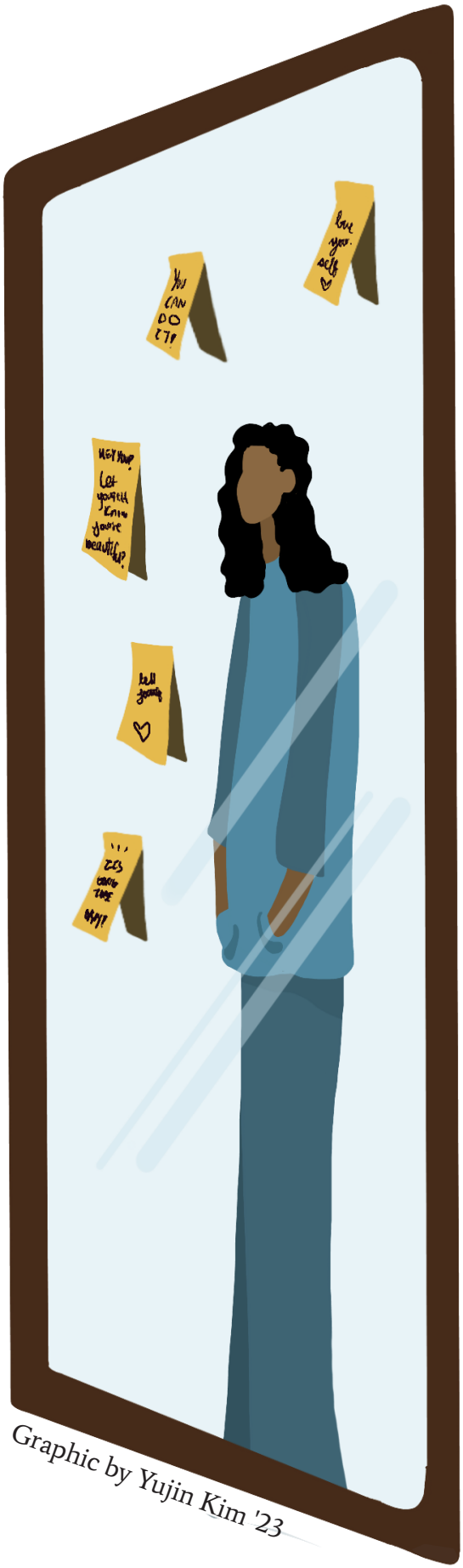


Graphic by Yujin Kim '23

SMART DRESSINGS:
THE FUTURE OF WOUND CARE

By Isabella Wu '24

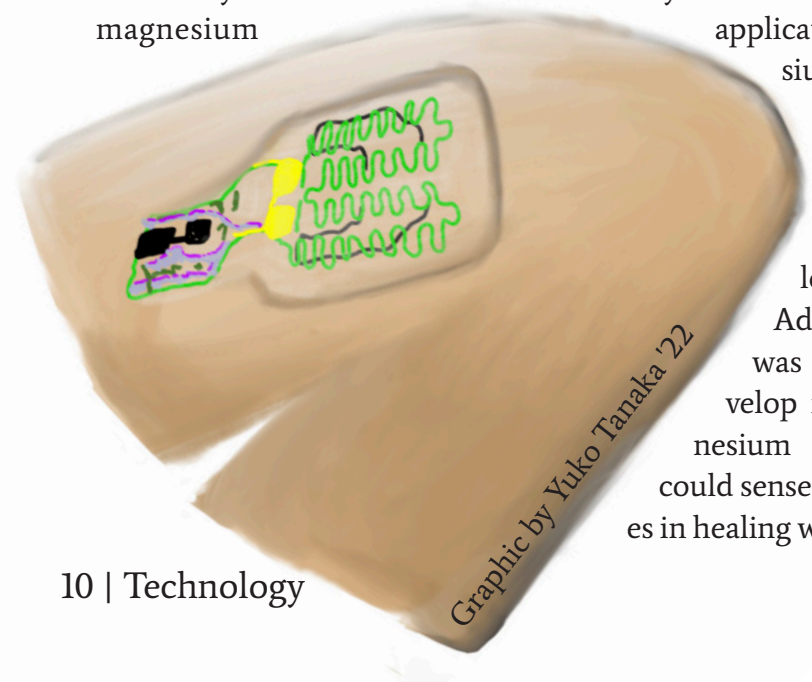
Technology and the development of different wound dressings have come a long way since the days when animal fat, honey, and herbal pastes were the go-to dressing methods.[1] However, one major flaw in current wound dressing methods is that there is no way to check the progress of the wound other than to remove and reapply multiple dressing layers, a process that provides opportunities for pathogens to invade and attack.[2]

A team of scientists and engineers at the Royal Melbourne Institute of Technology University (RMIT) in Australia have engineered an innovative solution: "smart" wound dressings that carry fluorescent magnesium sensors to monitor the healing progress. These sensors make use of the pH differences between healthy skin and infected sheets — if the wound wasn't healing properly, the alkaline infected wound would cause the sensor to glow brightly under UV light.[2]

While equally effective at fighting bacteria and fungi, these magnesium dressings come at a much lower production cost — up to 20 times cheaper — since magnesium is more abundant than silver. Studies also show that these smart dressings can last up to seven days, which is longer than the life span of current antimicrobial dressings.[2]

However, there has been relatively little research done on the applications of magnesium's antibacterial properties on dressings. A new study published in 2021 led by author Dr. Adam Truskeqyc was the first to develop fluorescent magnesium nanosheets that could sense and track changes in healing while also remaining thin and flexible enough to adhere to the curves of bandage fibers.[2] Thus, further collaboration with clinicians is needed to further the progress of dressing technology.

Nevertheless, the development of these economic smart dressings with built-in healing sensors is a significant advancement in wound care. Dr. Vi Khanh Truong concurs, saying that previous wound dressing methods were "painful and risky." On the other hand, the smart dressings would "fight bacteria," "reduce inflammation," and decrease the need for frequent dressing changes due to the ultra-convenient infection-tracking glowing sensors.[2]



Graphic by Yuko Tanaka '22

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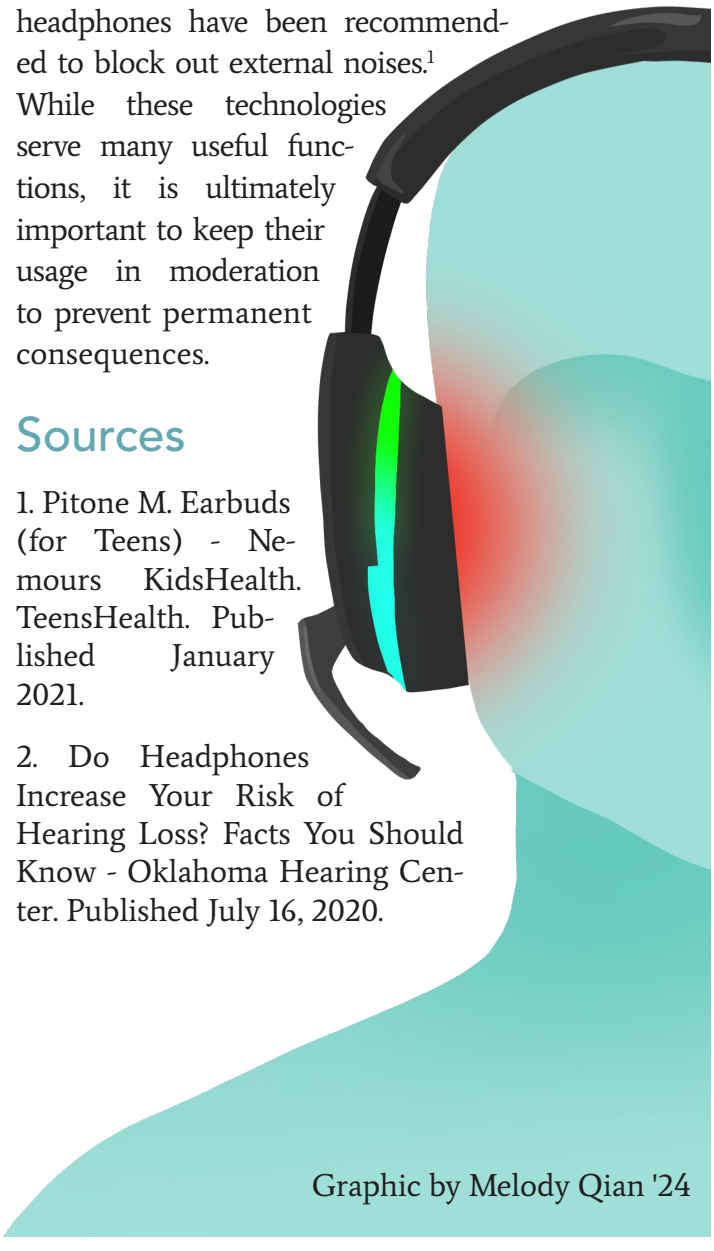
LISTEN TO THE RISKS OF HEADPHONE USAGE

By Sarah Yildrim '23

Ever since the technology boom, headphone usage, especially amongst the teenage population, has become very popular. Some of the reasons for this include the desire to listen to music or talk to friends in private. Though headphones can be greatly beneficial, headphones can also have many negative effects on one's hearing due to the technology's proximity to the ear and the volume at which teenagers tend to keep the noise at.

As a person ages, their hearing deteriorates because the hair cells in their ears are losing their sensitivity to vibrations. However, there are many factors that can quicken ear and hearing damage, including high noise levels from headphones. These hair cells normally send sound messages to the brain, but when they are damaged, they are unable to do so, causing a loss in hearing.[1] Many audiologists call the loss of hearing due to headphones "noise-induced hearing loss." Ringing, muffling, and buzzing in the ear may be signs of hearing loss in young people. In addition to the volume at which the headphones are at, the duration of headphone usage also matters.[2]

As mentioned, many young people currently use headphones throughout their day. However, the effects of headphones on hearing are significant, especially for teenagers. So, many doctors have recommended the "60%/60-minute" rule. This rule stipulates that people should only use their headphones for no more than 60 minutes at no more than 60% of the maximum volume. This is recommended for the safety of one's ears in order to prevent early hearing loss. If possible, over-the-ear models are recommended to decrease the chances of hearing loss. These are helpful because they maximize the distance between one's eardrum and the speaker. In addition, many doctors believe that the reason people turn the volume up so high is because of loud background noise. So, noise cancelling headphones have been recommended to block out external noises.[1] While these technologies serve many useful functions, it is ultimately important to keep their usage in moderation to prevent permanent consequences.



Graphic by Melody Qian '24

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CHINA'S STEP TOWARD A GREENER FUTURE

By Prim Tangkaravakoon '24

On September 21, 2021, Chinese President Xi Jinping announced to the United Nations General Assembly that China "will not build new coal-fired power projects abroad" but instead focus on the development of renewable energy.[1] This is one of China's newest developments to combat climate change. The country's decision has also prompted other large, emerging economies that rely on coal, such as India, South Africa, and Turkey, to reconsider their current non-environmentally friendly actions.[2]

China is not only the largest producer of greenhouse gases in the world but also the largest producer of coal and financier of international coal power plants.[1] According to the Boston University Global Development Policy Centre, China is financing over 20 coal power plants under construction in South Africa, Pakistan, the United Arab Emirates, and many other countries. There are also 17 more plants that are currently in the planning stage.[3] This has become a major issue domestically and internationally. While these power plants have a large impact on global warming, their health implications of coal power plants pose serious threats that should not be ignored. Coal power plants release numerous airborne toxins and pollutants, such as mercury, lead, sulfur dioxide (SO_2), and nitrogen oxides; create health problems like asthma and premature death; and also pollute water sources.

Additionally, China is also taking steps to limit household coal usage. Recently, Chinese officials visited houses in Tangshan, a city in the Hebei province that has been experiencing heavy smog, to confiscate coal and briquettes.[4] With not many regulations on coal combustion in China, people burn coal within their homes as a source of fuel for cooking and heating. However, the smoke has impacted the breathability of indoor spaces and can become detrimental to many people's health.[5] Burning coal produces bottom ash and fly ash, which can enter the air as SO_2, a gas that can negatively affect those with respiratory problems and heart diseases.[6]

SO_2 can also travel to distant locations and become a part of acid rain. This phenomenon can infiltrate water systems and bodies of water, exposing marine life to pollution. Fish that are caught for food may contain various pollutants. For example, the primary source of mercury in human exposure was discovered to be from fish. If eaten in large amounts, the pollutants may reach a lethal concentration within the body.[5]

It's important to note that these household usages are not the main contributors to the nu-

merous environmental and health issues in China. Instead, the problems stem from much larger sources. Tangshan is considered to be a "steelmaking hub" and is full of cement and steel plants that run on coal and other nonrenewable energy. The city has started to implement an environmental protection plan that requires plants to reduce their emissions by 50% on days the city is put under a heavy pollution alert. Should the plants fail to follow the plan, the city can revoke their pollutant discharge permits. Cities across China are also embarking on similar journeys to tackle the environmental and health impacts of industrial plants.[7]

Other countries have urged China to also reconsider its domestic coal power plants and to move towards relying on renewable energy instead. These power plants supply most of China's electricity. However, Xi has not been clear about anything regarding coal power plants in China. According to estimations by the Centre for Research on Energy and Clean Air in Finland, China possesses over "three times more new coal power capacity than all countries in the world combined."[1] In 2020, the country added a total of 41 gigawatts of coal power, which was 75% of the global total. Another of China's recent pledges was to reduce future carbon dioxide emissions by two hundred million tonnes each year, but this is only 0.5% of annual global emissions.[8]

Although China is still far from adequately addressing climate change, the country's current steps to stop building new coal power plants abroad, enforce citywide plans, and change individuals' lifestyles show progress. China's actions will hopefully allow other nations to reconsider their environmental footprints and take a big step towards a cleaner and healthier future.

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